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THESIS

JAPAN'S NUCLEAR WEAPONS OPTIONS AND U.S. SECURITY INTERESTS

by

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June 1998

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**JAPAN'S NUCLEAR WEAPONS OPTIONS
AND U.S. SECURITY INTERESTS**

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Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF ARTS NATIONAL SECURITY AFFAIRS

from the

**NAVAL POSTGRADUATE SCHOOL
June 1998**

ABSTRACT

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Japan is a virtual nuclear weapons power. It has the scientific and technical ability to produce hundreds or even thousands of nuclear weapons, but has chosen not to do so for political reasons. This thesis examines the historical development of Japan's nuclear energy and aerospace programs since the mid-1950s and considers the possibility that at various points in its history, Japan used these programs as a cover to insure that its nuclear weapons options remained open.

This thesis analyzes internal and external factors that may have influenced Japan's nuclear policies. External factors include regional threats, international pressures to join the Non-Proliferation Treaty, and distrust of U.S. commitments to provide for Japan's defense. Internal factors include Japan's historical tradition of a strong military state and Japan's unique nuclear allergy. While both external and internal factors have influenced the path of Japan's nuclear energy and aerospace programs, internal factors will drive Japan to maintain its plutonium-based energy program and will allow Japan to remain a virtual nuclear power well into the twenty-first century.

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EXECUTIVE SUMMARY

Since the early 1950s Japan has taken incremental steps to develop an autonomous plutonium-based nuclear energy program. Such a program appealed to Tokyo because it allows for plutonium extraction from nuclear waste and subsequent re-use in reactors, thereby creating a never-ending fuel supply. To meet expected plutonium demand, Japan imported plutonium and produced plutonium domestically. The implementation of the commercialization of Japan's plutonium program, however, has been behind schedule, thereby causing Japan to acquire a large plutonium stockpile and stirring international anxiety over the possibility of nuclear proliferation.

International concerns over Japan's plutonium stockpile are compounded by the fact that Japan's space program provides it with a potential long-range missile capability. In February 1996 Japan launched a rocket to test reentry technology. The success of the test demonstrated that Japanese scientists had mastered one of the most advanced technologies required to build ICBMs. Should Japan decide to do so, it has the technological ability to modify its rockets to serve as long-range missiles.

Japan's plutonium stockpile and long range missile capabilities lead some to believe that Japan has taken deliberate steps to become a virtual nuclear weapons state – that is, a state that masters the technologies and acquires the necessary materials to produce nuclear weapons, but does not go through with nuclear weapons assembly. Other explanations, however, may account for Japan's behavior – such as a desire to pursue energy independence and space-based telecommunications. Seen in this light,

Japan's achievements in these areas would not be considered elements of a purposeful military program.

This thesis attempts to determine to what extent Japan's nuclear energy program may have been used to serve military intentions. It also examines the implications of Japan's virtual nuclear power status for U.S. security policy in Asia as well as the implications for U.S. nonproliferation policy globally.

According to neorealist theory, external factors will cause Japan to "go nuclear." Neorealist theory suggests that the ultimate concern of states is security and that the international system is characterized by anarchy. States must therefore provide for their own security. If U.S. nuclear guarantees are assumed to be unreliable, obtaining nuclear weapons is the only way in which Japan can defend itself against nuclear powers such as Russia, China, and possibly North Korea. Neorealist theory, therefore, suggests that Japan will develop nuclear weapons in order to defend itself and take its rightful place as a global power.

By way of contrast, Peter Katzenstein argues that Japan's foreign policy choices are determined not primarily by international circumstances, but by internal factors. Katzenstein maintains that the civilian authorities will not allow Japan's self defense forces and interested bureaucracies to pursue nuclear weapons.

These theories, which focus upon internal and external influences on Japan's nuclear policy, are examined in this thesis over three time periods: (1) 1952-1964, the origins of Japan's nuclear energy experimentation through the first stages of nuclear

energy production; (2) 1964-1976, the debate over whether Tokyo should sign the nuclear Nonproliferation Treaty (NPT) through its ratification of the treaty; and (3) 1976-present, the global move away from plutonium to Japan's current virtual nuclear power status. The final chapter provides a review of the effects of both external and internal factors on Japan's nuclear policies and examines implications of these effects for U.S. nuclear policy in Asia.

Rather than accepting either theory in its entirety, this thesis argues that domestic norms and internal factors probably will cause Japan to keep its nuclear options open, thereby maintaining a virtual nuclear power status. However, this thesis concludes that Katzenstein's argument is accurate in holding that internal factors will cause Japan to resist the production of nuclear weapons in the foreseeable future, while neorealist theory is correct in underscoring how perceptions of insecurity drive Japan's intent in keeping its nuclear options open.

LIST OF ACRONYMS

ACDA	Arms Control Disarmament Agency
DPRK	Democratic People's Republic of Korea
FBIS	Foreign Broadcast Information Service
FBR	Fast Breeder Reactor
HYFLEX	Hypersonic Test Flight Experiment
IAEA	International Atomic Energy Agency
ICBM	Intercontinental Ballistic Missile
IRBM	Intermediate Range Ballistic Missile
JAEC	Japan's Atomic Energy Commission
JAERI	Japan's Atomic Energy Research Institute
LDP	Liberal Democratic Party
LWR	Light Water Reactor
MOX	Mixed Oxide Fuel
NPT	Nuclear Nonproliferation Treaty
OTA	Office of Technology Assessment
PRC	People's Republic of China
PNC	Power Reactor and Nuclear Fuel Development Corporation
Pu	Plutonium
SIPRI	Stockholm International Peace Research Institute



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I. INTRODUCTION

A. THESIS FRAMEWORK

1. Question

Why has Japan developed the capability to produce nuclear weapons but refrained from doing so? This thesis analyzes internal factors, such as Japan's strategic culture, and external factors, such as international threats, which may have influenced the direction of Tokyo's nuclear policies since 1952. It attempts to determine the extent by which Japan's current status as a virtual nuclear weapons power results from deliberate policy decisions or amounts to an unintended by-product of Tokyo's pursuit of a plutonium-based energy program and other capabilities, such as space systems. Furthermore, it examines implications of Japan's virtual nuclear weapons status for U.S. security policy in Asia as well as the implications for U.S. nonproliferation policy globally.

2. The Existing Debate

According to Kenneth Waltz, external threats will cause Japan to "go nuclear." Neorealist theory suggests that the ultimate concern of states is security and that the international system is characterized by anarchy. States must therefore provide for their own security. If U.S. nuclear guarantees are assumed to be unreliable, obtaining nuclear weapons is the only way in which Japan can defend itself against nuclear powers such as

Russia, China, and possibly North Korea. Neorealist theory, therefore, suggests that Japan should develop nuclear weapons to defend itself.¹

By way of contrast, Peter Katzenstein argues that Japan's foreign policy choices are determined not by international influences but by internal factors, and that these will prevent Japan from pursuing nuclear weapons.² His "institutionalist" argument states that political decisions in Japan are influenced by institutionalized norms. Norms embody the qualities that define Japan's identity and lay out the acceptable standards of conduct for political decision making.

The norms that influence political decisions are regulatory and constitutive norms. Regulatory norms define the standards that are appropriate for political actions in Japan, such as Japan's policy to pursue its security policy by peaceful means. Constitutive norms are defined as those which shape behavior such as convictions about the essence of the Japanese national "identity." While the constitutive norm of economic security is not contested in Japan, military security is deeply contested. Nevertheless, the regulatory norm of civilian supremacy over the military is firmly entrenched, a circumstance which suggests that the civilian authorities will not allow Japan's self defense forces and interested bureaucracies to pursue nuclear weapons.

¹ Kenneth Waltz, "The Origins of War in Neorealist Theory" in Classic Readings of International Relations, Phil Williams and Donald M. Goldstein, ed. (Pittsburgh: Harcourt Brace College Publishers, 1994), 39-52.

² Peter Katzenstein, Cultural Norms and National Security (Ithaca: Cornell University Press, 1996), 1-57.

3. Argument

Rather than accepting either theory, this thesis argues that internal factors, such as the constitutive norm of Japanese strategic culture, Japan's aversion to nuclear weapons, the desire for energy autonomy, and the regulatory norm of "unfair" international treaties, cause elites to ensure Japan's nuclear weapons options remain open. This argument differs from the neorealist argument of Waltz and the institutionalist argument of Katzenstein. While it concurs with Katzenstein that internal factors influence Japan's nuclear policy, this thesis reaches conclusions that are distinct from his – namely, that Japan has developed nuclear weapons options and can be considered a virtual nuclear power.

If one considers regulatory and constitutive norms as influencing Japan's nuclear weapons options, then the conclusions of neorealism are challenged. Where neorealism suggests that anarchy causes the pursuit of self-help, this thesis counters that the nuclear policies of Japan cannot be understood without considering internal factors.

B. JAPAN'S NUCLEAR POLICY

Japan's "nuclear policy" is the dependent variable of this thesis – the outcome to be explained. It shall be defined in terms of Japan's "capabilities" to build nuclear weapons, and Tokyo's "intentions" to do so.

1. Capabilities

Nuclear weapons capabilities include the technical and scientific assets that could be used for production of nuclear weapons systems. Such systems include Japan's reprocessing capability, fast breeder technology and rocket technology. In this thesis, the

term "nuclear weapon systems" will be construed to include the delivery systems, command and control capabilities, infrastructure, personnel, etc., necessary for an effective nuclear weapons posture.

a) Plutonium Stockpile

In the early 1950s Japan took incremental steps to develop an autonomous plutonium-based nuclear energy program. Such a program appealed to Japanese officials because plutonium can be extracted from nuclear waste and re-used in reactors, thereby creating a never-ending fuel supply.

In 1956 Japan's Atomic Energy Agency (JAEC) issued a "Long Term Program" which laid the foundation for the development of a Fast Breeder Reactor (FBR), a nuclear reactor that "breeds" plutonium. In 1967 Tokyo revised the Long Term Program to include the development of a plutonium reprocessing facility.³ Subsequently, in the 1970s, Tokyo signed binding contracts to import plutonium from France and Britain to satisfy the projected plutonium demand.⁴

The implementation of the "Long Term Program," ran behind schedule. It was not until 1974 that Japan opened its first domestic reprocessing facility, "Tokai."

³ See JAEC, "Long Term Plan for Development and Use of Atomic Energy," April 13, 1967 in Eugene Skolnikoff, Kenneth Oye and Tatsujiro Suzuki, International Responses to Japanese Plutonium Programs (Cambridge: Center for International Studies, MIT, 1995), 2.

⁴ Since the 1970s, fuel from Japan's commercial nuclear power plants has been sent to Sellafield or Cap la Hague for reprocessing. Between 1970 and 1979 Japan made a total of 13 shipments of spent fuel from Britain to Japan. Recently these shipments have come under international scrutiny because of the associated proliferation risk. Even though these shipments have damaged Japan's reputation in nonproliferation terms, Japan continues to import plutonium.

Japan's first FBR, "Monju," did not go critical until 1994. The combination of Japan's plutonium imports, domestic plutonium production, and the slow implementation of Japan's energy plan have caused Japan to stockpile 69.6 tons of plutonium.⁵ This stockpile causes international anxiety because of the possibility that it might be diverted from energy production to military applications – even though Japan's nuclear fuel program is under full-scope safeguards of the IAEA.

According to the National Academy of Sciences, "virtually any combination of plutonium isotopes can be used to make a nuclear weapon."⁶ Using "reactor-grade" plutonium (plutonium containing over eighteen percent of the isotope Pu-240) rather than "weapons-grade" plutonium (i.e., plutonium containing less than seven percent of the isotope Pu-240), however, would likely present some complications.⁷

But with relatively simple designs such as that used in the Nagasaki weapon, which are within the capabilities of many nations and possibly some sub-national groups, nuclear explosives could be constructed that would be assured of having yields of at least 1 to 2 kilotons. Using more sophisticated designs, reactor grade plutonium could be used for weapons having considerably higher minimum yields.⁸

⁵ Japan has 20,100 kg plutonium yet to be irradiated, of which, 600 kg is at the processing plant warehouse, 3,100 kg either currently being in fuel process or fuel manufacturing, 900 kg put in nuclear reactors or processed products, 400 kg stored in other places, and 15,100 kg in other countries. "STA Reports Plutonium Stockpile of 69.6 tons". Online. Available FBIS-EAS-98-077. 18 March 1998.

⁶ Committee on International Security and Arms Control, National Academy of Sciences, Management and Disposition of Weapons Plutonium (Washington D.C.: National Academy Press, 1994), in Selig Harrison, Japan's Nuclear Future (Washington D.C.: Carnegie Endowment for International Peace, 1996), 75.

⁷ David Albright, Frans Berkhout and William Walker, Plutonium and Highly Enriched Uranium (Oxford: Oxford University Press, 1997), 49.

⁸ Quoted in Skolnikoff, et al. International Responses to Japanese Plutonium Programs, 18.

Therefore, regardless of which plutonium isotopes that Japan has in its stockpile, it could all be utilized for the production of nuclear explosive devices.

Stockholm International Peace Research Institute (SIPRI) states that U.S. nuclear weapons contain approximately three to four kilograms of plutonium, while a RAND study estimates that ten kilograms of reactor grade plutonium are required to form a critical mass.⁹ Unclassified estimates therefore vary. Considering that Japan has 69.6 tons of separated plutonium, it is easy to understand why Japan's plutonium stockpile may cause anxiety in nations suspicious of Tokyo's nuclear weapons intentions.

b) Rocket Capabilities

Should Japan develop the will to do so, it has the technological ability to modify its rockets to serve as long-range missiles. For example, if the rocket-delivered satellite in the M-5 rocket were to be exchanged for a nuclear warhead, with a changed flight path, the M-5 would become a ballistic missile capable of striking land targets. Similarly, if the engine casing of the H-2 rocket were to be exchanged for one made out of carbon fiber compound material, the H-2 would need only a booster to become a single stage solid rocket that could deliver a two ton warhead at a range of 5500 km.¹⁰ Furthermore, in February 1996, Japan launched a J-1 experimental rocket equipped with a

⁹ Albright, et al. Plutonium and Highly Enriched Uranium, 1996, 17.

¹⁰ Fang Tung, "A Warning Against Japan's Rising Nuclear Missile Might" Hong Kong Hsien-Tai Chun Shih (Conmilit) in FBIS-CHI-98-006, 11 November 97.

Hypersonic Flight Experiment (HYFLEX) to test reentry technology. The success of the test demonstrated that Japanese scientists had mastered one of the advanced technologies necessary for ICBMs.¹¹

c) Japan: Virtual Nuclear Weapons Power

The combination of Japan's plutonium stockpile and long range missile capabilities has caused some, such as Andrew Mack, to describe Japan as a virtual nuclear weapons state – that is, a state that approaches the threshold of nuclear weapons production but does not go through with nuclear weapons assembly.¹² Japan has the fissile and other materials, the technological ability to fabricate weapons and the ability to test them, which are the three distinct stages nations generally go through to produce nuclear weapons.¹³

Some claim that Japan is only days away from nuclear weapons production. The British *Sunday Times* cites a secret government document in its report that "Japan has acquired all the parts necessary for a nuclear weapon and may even have built a bomb which requires only plutonium for completion."¹⁴ A more conservative

¹¹ See Japan's Nuclear Future, for discussion of ICBM threat inherent with re-entry technology.

¹² Andrew Mack, "Potential not Proliferation," Bulletin of the Atomic Scientists (July/Aug 1997), 50.

¹³ U.S. Congress, Office of Technology Assessment, Technologies Underlying Weapons of Mass Destruction (Washington DC: US Government Printing Office, 1993), 130.

¹⁴ Nick Rufford, "Japan to 'go nuclear' in Asian arms race." Sunday Times, (30 January, 1994), Online. LEXIS-NEXIS. Library: News. File: Allnws, 17 August 1997.

estimate is that if Japan embarked on a crash nuclear program, it could have nuclear weapons within a year.¹⁵

2. Intentions

The intention component of the dependent variable is defined as the impetus behind certain decisions regarding Japan's civilian nuclear program. Analyzing the intentions of any policy making elite is somewhat speculative and can be imprecise. This is especially true in the analysis of a nation's decision to "go nuclear." The decision to proliferate may be made at the senior levels of government and known only by the most senior officials. Unless these elites reveal their intentions, they may be difficult to determine. By examining declassified sources and domestic attitudes toward nuclear weapons, however, one can begin to identify intentions. Declassified sources provide information regarding secret communiqués or conversations of national elites not known to the general public, thereby providing the analyst a window to view their intentions.

An analysis of public opposition to nuclear weapons also helps one to understand Tokyo's intentions. In democracies, the public life of the political elites depends upon popular support. Therefore, one can predict that democratic political elites may defer to the preferences of public opinion, thereby allowing one to assess their intentions, at least with regard to declaratory policy. Through analyzing public opinion and declassified documents, one can discern the probable intentions of Japanese policy making elites.

¹⁵ Anthony Paul, "Jury's still out on whether Japan has, or wants, the bomb" Asia Times, (3 July, 1996), Online. LEXIS-NEXIS. Library: News. File: Allnws, 17 August 1997.

C. CAUSAL FACTORS

The causal factors that will be used to explain Japan's nuclear weapons policies are internal and external factors. Internal factors include the domestic norms, such as policy debates in elite circles and Japan's strategic culture. External factors are circumstances that influence Japan's security, such as regional relations and the U.S.-Japan security alliance.

1. Internal Factors

Katzenstein argues that the state is comprised of different sets of political relationships and that one cannot view the state as a single unitary actor. One can gain insight into a state's response to domestic and international concerns through understanding these relationships. The interrelationships between organizations, state and society, and society and the international environment contribute to forming a national identity.

This thesis examines the internal factors of Japan's aversion to nuclear weapons, the value placed on energy autonomy, the long-standing aversion to unequal treaties, and strategic culture. Policy debates and society-wide attitudes toward each of these factors suggest that there is a causal relationship between such factors and Japan's nuclear weapons policies.

2. External Factors

Neorealism is based on six assumptions: states are unitary actors, the world is characterized by anarchy where no state is entitled to command or obligated to obey, states seek to maximize their power, the international system is mostly responsible for state conduct, states are rational, and states use the threat of force to protect their

interests.¹⁶ Because the state is considered to be a single unitary actor, neorealism does not examine its inner workings. Hence neither the relationship between the state and society nor a nation's cultural identity merits attention in the neorealist framework of analysis.

This thesis examines U.S. President Eisenhower's Atoms for Peace policy, the Chinese nuclear threat, U.S. nuclear policy, the nuclear proliferation debates of the 1960s, and the 1993 North Korea crisis as external factors that might have influenced Japan's nuclear policies. According to neorealist theory, these factors might cause Japan to produce nuclear weapons. Japan, however, has not produced a nuclear weapon. Therefore, one must question to what extent neorealism can be used to predict Japanese policy decisions regarding nuclear weapons.

D. ORGANIZATION OF THESIS

Waltz's neorealist and Katzenstein's institutionalist arguments, which focus upon internal and external influences on Japan's nuclear policy, are examined over three time periods in three separate chapters. Each chapter is divided into two sections. The first section examines Japan's capabilities and intentions to identify Tokyo's nuclear policies during the time period under study. The second section analyzes the effects of internal and external factors on Japan's nuclear policies.

¹⁶ Hans Morgenthau, "Six Principles of Political Realism," in Classic Readings of International Relations, 34-38.

Chapter II examines the period 1952-1964, which covers the origins of Japan's nuclear energy experimentation through the first stages of nuclear energy production. It suggests that Japan's nuclear research began without military aspirations but that after 1957, political elites began to consider military applications of their nuclear energy research.

Chapter III examines Japanese nuclear policies in 1964-1976. It focuses on the debate over whether Tokyo should sign and ratify the nuclear Nonproliferation Treaty. It suggests that elites did not want to foreclose Japanese nuclear weapons options and that they pursued policies maintaining these options.

Chapter IV focuses on the period from 1976 to the present. It describes the global move away from plutonium as an energy source to Japan's current virtual nuclear power status. This chapter argues that since 1976 Tokyo has pursued specific dual-use technologies that have applications to nuclear weapons production and delivery. These technologies have enabled Japan to approach the threshold of nuclear weapons production while not provoking excessively adverse foreign reactions.

The final chapter suggests possible implications of Japan's virtual nuclear weapons power status for U.S. security interests in Asia and presents scenarios in which Japan might exercise its nuclear options.

II. 1952-1964: A NEW BEGINNING¹⁷

A. INTRODUCTION

During the Second World War Japan tried to develop nuclear weapons. To acquire the fissile material necessary for nuclear weapon production, Japan mined uranium throughout its empire. By late 1944, however, Japanese researchers had failed to acquire enough uranium to produce a small critical mass. Nevertheless, Japanese scientists achieved remarkable advances in nuclear weapons research. A September 1945 debriefing of scientists who participated in Japanese research speculated that:

The Japanese would be able to organize a group of twenty first class scientists capable of initiating a project for the production of atomic energy. They have the theoretical background. They could progress rapidly to the point of production [of an atomic bomb], especially if they were given the results of the work in America in any detail. They appear to have the interest necessary to form such a plan.¹⁸

Thus by the end of the war, Japan's scientific community was advanced in nuclear weapons research.

With the end of the Second World War, Japan's vast military-industrial complex was dismantled by the victors, principally the United States, so that Japan would never again have an offensive military capability. Rather than abandoning its nuclear research, Japan sought a civil nuclear power program, which enabled Japan to become a virtual

¹⁷ Robert Wilcox presents evidence that Japan pursued the development of nuclear weapons during the Second World War in his book, Japan's Secret War. The title of this chapter refers to Japan's resumption of nuclear weapons related research following Japan's devastation during the war.

¹⁸ Robert Wilcox, Japan's Secret War (New York: Marlowe and Company, 1995), 182.

nuclear weapons state. This chapter examines whether Japan's virtual nuclear weapons power status was achieved as an intentional goal or as an unintentional by-product of Japan's nuclear power generation policies, such as trying to develop greater energy autonomy and to lessen its dependence on imports of fossil fuels. It examines the development of Japan's nuclear energy program between 1952 and 1964 and considers the possibility that Japan used its nuclear energy program as a cover to insure that its nuclear options remained open. The question to be answered is: what factors influenced the direction of Tokyo's nuclear policy from 1952 to 1964?

The chapter is divided into two parts. The first part examines Japan's nuclear policies and suggests that after 1957 at least some senior policy makers within the LDP were willing to pursue policies facilitating the establishment of nuclear weapons options. The second part examines the factors influencing the decisions to pursue such a capability. This chapter suggests that internal factors influenced Japanese elites to pursue nuclear policies that facilitated the pursuit of nuclear weapons options after 1957.

B. JAPAN'S NUCLEAR POLICY

Since the end of the Second World War, Japan has been preoccupied with the challenge of competing in the world economy while having few indigenous natural resources. During the early 1950s Japan began to take incremental steps to develop an autonomous plutonium-based nuclear energy program. Such a program appealed to the Japanese government because it allows for plutonium extraction from nuclear waste and

subsequent re-use in reactors, thereby creating a never-ending fuel supply. While plutonium can be used for reactor fuel, it can also be used to produce nuclear weapons.

Japan's policies on nuclear weapons are explicitly stated. Article nine of Japan's constitution outlaws the ability to make war. Many Japanese people view nuclear weapons as embodying an offensive military capability; therefore, in accordance with the Japanese constitution, they are seen as illegal. It is the Atomic Energy Basic Law of 1955, however, that makes the research and development of nuclear weapons illegal.¹⁹

While it is Japan's official policy not to pursue nuclear weapons development, it is possible that Japanese elites have pursued an undeclared nuclear policy. By examining elite intentions in conjunction with Japan's nuclear weapons capabilities, one can determine a plausible interpretation of Japan's true nuclear policy. This section demonstrates that from 1952 to 1957, society-wide abhorrence to nuclear weapons drove Japan's nuclear policy. During the late 1950s, however, there was a shift in the intentions of Japanese policy-making elites that encouraged them to pursue nuclear policies that facilitated the establishment of nuclear weapons options.

1. Intentions

As the only nation to have been attacked with nuclear weapons, it is not surprising that the Japanese people are outspoken in their opposition to nuclear weapons. As early as

¹⁹ Ryukichi Imai, Japan's Nuclear Policy (Tokyo: Institute for International Policy Studies, 1996), 5.

1954, Japanese opposition to nuclear weapons was documented in national newspapers.²⁰ Opposition to nuclear weapons existed throughout the 1950s, even though the Soviet Union posed a potential military threat. A 1957 poll indicates that nearly six out of ten respondents favored a ban on nuclear weapons even if that were to give the Communist bloc military predominance.²¹

The opposition to nuclear weapons was confirmed in a secret U.S. Department of State memorandum, which stated:

For their own national policy, the Japanese are virtually unanimous in wanting nothing whatever to do with nuclear war potential... These views are common to all political parties, social groups, and intellectual levels... The nuclear attacks on Hiroshima and Nagasaki are recalled with almost religious fervor.²²

Japanese opposition to nuclear weapons spanned all of society. Policy-making elites probably held similar views, which influenced nuclear weapon policy formulation.²³

Declassified U.S. documents indicate that around 1957, senior elites within Japan's Diet and defense establishment changed their attitude toward nuclear weapons. These sources suggest that the elites were not as affected by public opposition to nuclear

²⁰ In a nationwide poll in 1954, only eleven percent of Japan's population supported Japan's cooperation with the atom bomb tests of the United States in the South Pacific. See John Endicott, Japan's Nuclear Option (New York: Praeger Publishers, 1975), 91.

²¹ Department of State, "The Relationship of Japan to Nuclear Weapons and Warfare," 22 April 1957, ii.

²² *Ibid.*, 1.

²³ "It is clear that Japanese public opinion is a controlling factor in the formulation of Japan's national policy toward nuclear weapons." *Ibid.*, 9.

weapons as they had been from 1952 to 1957. The U.S. State Department reported in 1957 that:

The defense establishment itself and its partisans in the Diet and the ruling Liberal-Democratic Party apparently aim at ultimately equipping Japan's forces with nuclear weapons ... the Defense Agency planning board is proceeding under the assumption that nuclear weapons would be a standard condition of future warfare.²⁴

While somewhat speculative, this assessment suggests that after 1957 popular opposition to nuclear weapons did not drive the nuclear policies of senior elites. Even though public opposition to nuclear weapons remained steadfast, senior elites apparently considered the indigenous production of nuclear weapons a viable option in the late 1950s.

Tokyo began a campaign in 1957 to accustom the public to the notion that Japan should have nuclear weapons.²⁵ Japanese scientists were encouraged by the government to take a more objective public position on the effects of fall out.²⁶ By influencing scientific statements about the effects of nuclear weapons, Japanese elites may have hoped to persuade the public to be more accepting of such weapons.

Further evidence of such a campaign can be found in public statements made by Prime Minister Kishi. In 1957 he openly asserted that the "acquisition" of tactical nuclear weapons by Japanese defense forces would not be unconstitutional and that Japan might "be entitled to acquire nuclear weapons for self defense, when the danger of fall-out from

²⁴ Department of State, "The Outlook for Nuclear Weapons Production in Japan," 2 August 1957, 6-7.

²⁵ Ibid., ii.

²⁶ Department of State, "The Relationship of Japan to Nuclear Weapons and Warfare," 6-7.

such weapons had been minimized by improvements."²⁷ Prime Minister Kishi represented the majority party in the Diet. Therefore his statement suggests that senior elites were not as opposed to nuclear weapons as they had once been. His statement prompted the U.S. State Department to issue a secret report:

Contrary to the impression conveyed by the overwhelming popular sentiment in Japan against any association with nuclear weapons, there is mounting evidence that the conservative government in Tokyo secretly contemplates the eventual manufacture of such weapons... The Defense Agency evidently views nuclear weapons as indispensable in modern war.²⁸

This conclusion suggests that there was a break between the views of policy-making elites and the views of the mass public regarding nuclear weapons. Even though society remained opposed to such weapons, the government apparently considered nuclear weapons a desirable option. Kishi's statement and the government's attempt to persuade scientists to be less negative toward nuclear weapons suggest that around 1957, Japanese elites embarked on a deliberate effort to sway public opinion, thereby suggesting the possibility that Tokyo may have been considering nuclear weapons research and production.

One indication that Tokyo may have been contemplating eventual nuclear weapons production comes from the internal debate surrounding whether American nuclear weapons should be stored in Japan. The Japanese public was opposed to such an option, but some policy makers evidently did not share the public's hesitation. A State

²⁷ Department of State, "The Outlook for Nuclear Weapons Production in Japan," 2.

²⁸ Ibid., ii.

Department document indicates that "the government secretly did not share, at least to a decisive degree, the objections of the Japanese public to nuclear weapons storage."²⁹ This view was expressed to senior U.S. policy makers but was kept from Japanese citizens. It therefore suggests that policy makers may have considered pursuing nuclear policies at variance with public opposition to nuclear weapons. The Japanese Prime Minister privately stated that "the very fact that there is a debate in Japan on the problem of nuclear weapons for Japan reflected the fact that at least a minority considered it necessary for Japan to have nuclear weapons. This minority ... included people in his own cabinet and party."³⁰ Therefore, at least some senior policy makers were willing to pursue policies enabling Tokyo to have nuclear options.

2. Capabilities

The basis for Japan's virtual nuclear power status resides in the development of its civil nuclear power facilities. From the early stages of Japan's civil nuclear power program, many recognized the dual-use nature of the nuclear industry. The U.S. State Department identified one potential application of Japan's nuclear energy program:

If successful in developing its own fuel sources and reactors as seems probable, Japan could soon accumulate its first uncontrolled supplies of plutonium or other fissionable materials of weapons grade, as a by-product of nuclear power generation. From this stage, which may be reached in as little as five years, the production of a few nominal weapons ... would be a relatively brief step.³¹

²⁹ Department of State, "The Relationship of Japan to Nuclear Weapons and Warfare," 8.

³⁰ Department of State, "Memorandum of Conversation," 27 November 1961.

³¹ Department of State, "The Outlook for Nuclear Weapons Production in Japan," ii.

Furthermore, a 1957 State Department document indicates that "both sides of the weapons controversy are intensely interested in pressing the commercial exploitation of nuclear energy: one side wishes to confine the nation to [nuclear energy production], while the other envisions ... a collateral expansion into the nuclear weapons field."³² This quotation suggests that some viewed Japan's nuclear power program as the key that would enable Tokyo to pursue a nuclear weapons program.

By the early 1960s, the U.S. Arms Control and Disarmament Agency had identified Japan as one of eight countries that would have the technical and financial resources to develop an operational nuclear weapons capability during the decade.³³ By 1964, ACDA had narrowed its assessment: Japan might obtain a nuclear weapons capability within six years.³⁴ This assessment was based on Japan's technological and economic capabilities and the opinion that psychological barriers to the acquisition of nuclear weapons were diminishing.

When one considers the apparent change in the attitude of Japanese policy makers toward nuclear weapons in conjunction with assessments of Japan's technical ability to

³² Ibid., 5.

³³ Arms Control Disarmament Agency, "Likelihood and Consequences of a proliferation of Nuclear Weapons Systems," 28 June 1963. In David Mabon and David Patterson eds., Foreign Relations of the United States 1961-1963 Vol 7 (Washington D.C.: U.S. Government Printing Office: 1995), 747.

³⁴ Motoya Kitamura, "Japan's Plutonium Program: A Proliferation Threat?" Nonproliferation Review (Winter 1996): 6.

produce nuclear weapons, it appears that Japan's undeclared nuclear policy after 1957 may have been to pursue a nuclear weapons capability.

C. CAUSAL FACTORS

Japan's nuclear policy may have changed direction after 1957 because of the effects of internal and external factors. Internal factors, such as Japan's "nuclear allergy" and the national desire to achieve energy autonomy, help to comprise Japan's cultural identity. These constitutive norms, therefore, affect nuclear policy decisions. External influences on Japan's nuclear policies include Eisenhower's Atoms for Peace policy, U.S. security guarantees, and regional pressure to pursue nuclear weapons. This section argues that external factors influenced Japan's initial pursuit of nuclear energy but that internal factors caused Tokyo to pursue technologies providing Japan with nuclear weapons options after 1957.

1. External Factors

a) Atoms for Peace

President Eisenhower delivered his Atoms for Peace speech to the United Nations General Assembly in 1953. The main objective of Atoms for Peace was to establish international control over nuclear power generation. The nuclear energy producing nations were required to make contributions from their stockpiles of natural uranium and fissionable materials to an International Atomic Energy Agency (IAEA) established under the umbrella of the United Nations. This agency would be responsible

for storing and safeguarding the material and for devising methods to facilitate international peaceful nuclear energy research and development.

Even though Japanese elites were interested in nuclear energy prior to the speech, Tokyo took little action to implement a large-scale nuclear energy program. The policies announced in the Atoms for Peace speech, however, provided the means by which Tokyo could begin to pursue nuclear energy research and achieve ultimate energy security.³⁵

Following the speech, Japan implemented extensive plans for a civil nuclear energy program, thereby suggesting that the Atoms for Peace speech was a causal factor affecting the implementation of Japan's civil nuclear energy program. Richard Samuels states that "President Eisenhower's Atoms for Peace initiative touched off a full-scale nuclear fever in Japan."³⁶

In 1955 Japan established the Atomic Energy Commission (JAEC), with the proviso that "the development and utilization of nuclear energy be limited to peaceful purposes and performed independently under democratic management."³⁷ This is known as Japan's policy of the peaceful use of atomic energy. Underlying this policy are the three

³⁵ To Tokyo, energy security means insuring the reliability of an energy supply and a strategy to reduce its vulnerability inherent in its dependence on external suppliers of natural resources.

³⁶ Richard J. Samuels, The Business of the Japanese State (Ithaca: Cornell University Press, 1987), 234.

³⁷ Endicott, Japan's Nuclear Option, 113.

principles of nuclear energy development: that it be autonomous, under democratic control, and not secret.³⁸

In 1956, the JAEC issued its first "Long-Term Program for Development and Utilization of Atomic Energy." This plan called for the development of a breeder reactor, which in theory would allow Japan's nuclear program to be self-sufficient. The plan acknowledged that breeder reactors would take several years to develop so it called for importing commercialized nuclear reactors until breeder reactors could be indigenously developed. Thus, Japan's long-term policy was to first import and bring into commercial operation American and British Light Water Reactors (LWR) while laying the foundation for an independent indigenous nuclear fuel cycle.³⁹ During the period from November 1961 to March 1965, eight research reactors went critical including the Tokai-1 reactor in 1962.⁴⁰ The Tokai-1 was based on the design of a British gas-cooled reactor. It provided Japan with its first requirement to reprocess spent fuel.

Reprocessing allows a nation that is poor in substantial quantities of uranium deposits to extract plutonium for subsequent re-use in breeder reactors or in specially designed light water reactors, thereby allowing it to be self-sufficient in nuclear energy production. One objective of the first long-term plan was for Japan to conduct

³⁸ Ronald A. Morse, ed., The Politics of Japan's Energy Strategy (Berkeley: University of California Press, 1981), 110.

³⁹ Morse, The Politics of Japan's Energy Strategy, 109.

⁴⁰ Encicott, Japan's Nuclear Options, 114.

reprocessing using domestic technology.⁴¹ Reprocessing facilities can be used to extract plutonium for reactor fuel or for nuclear weapons. While it appears that Japan implemented reprocessing to establish an indigenous nuclear energy cycle, it is possible that Japanese elites were interested in this second application of reprocessing facilities. Intentional or not, the development of dual-use facilities applicable to both energy recycling and nuclear weapon production allowed Tokyo to take a leap toward becoming a virtual nuclear weapons state.

b) China as a Potential Nuclear Threat to Japan

One factor that may have influenced the direction of Japan's nuclear policies from 1952 to 1964 was the external threat of China's pursuit of nuclear weapons. Many in the United States believed that if China "went nuclear," Japan would follow suit. The State Department affirmed this view through its assessment that "if another Asian State were to acquire nuclear weapons, Japan would have greater incentive to do the same. This would be particularly true of communist China."⁴² This assessment suggests that American policy makers assumed that external threats would dictate Japanese nuclear policy. This mistaken view continued into the early 1960s. A 1962 memorandum by the State Department for President Kennedy "foresaw a strong potential for China to acquire a nuclear arsenal,

⁴¹ Skolnikoff, et al. International Responses to Japanese Plutonium Programs, 2.

⁴² Department of State, "The Outlook for Nuclear Weapons Production in Japan," 8.

which would lead Japan to follow."⁴³ It does not appear, however, that Japanese policy makers perceived China's pursuit of a nuclear weapons capability to be a threat. In 1961, the Japanese Prime Minister privately stated to American policy makers that "Unlike the U.S., the Japanese people feel a sense of kinship to Mainland China due to geographic propinquity, long historical ties, and a sense of guilt regarding the last war."⁴⁴ His statement suggests that Japan's elites maintained views of China differing from those of policy makers within the United States. It appears that the external threat of a nuclear-armed China did not drive Japan's nuclear policy.

c) U.S. Nuclear Policy

One external factor that may have influenced Japan's nuclear policies during the period 1952 to 1964 was the U.S. commitment to provide for Japan's nuclear defense. American policy makers believed that providing for Japan's nuclear protection would eliminate the need for Japan to provide for its own nuclear defense. Policy makers in the United States believed that Japanese nuclear policy could be influenced by U.S. security commitments. As early as 1957, however, the U.S. State Department recognized that U.S. nuclear protection commitments would not necessarily affect the policy decisions of the Japanese government. A State Department document indicates that "Japan's decision about whether or not to manufacture its own nuclear weapons is not likely to be affected

⁴³ Motoya Kitamura, "Japan's Plutonium Program: A Proliferation Threat?" Nonproliferation Review (Winter, 1996): 6.

⁴⁴ Department of State, "Memorandum of Conversation," 21 June 1961.

fundamentally by any U.S. decision to make nuclear weapons available for the common defense."⁴⁵ This document also stated that "There is no clear indication that any partial limitation on the testing of nuclear weapons would in one way or another affect any potential Japanese decision to produce nuclear weapons."⁴⁶ One can deduce from these quotations that U.S. nuclear weapons policies probably had little effect on Japanese nuclear weapons policies. This external factor, therefore, may have had little impact – at least judging by this evidence. This question deserves fuller investigation when more data on Japanese views becomes available.

2. Internal Factors

a) Nuclear Allergy

While several internal factors may have affected Japan's nuclear policies, Japan's aversion to nuclear weapons seems to have had the greatest impact. Japan's distaste for nuclear weapons began after the bombing of Hiroshima. In 1954, however, this distaste turned into wide spread hatred. The prime catalyst for this hatred was the *Fukuku Maru* (Lucky Dragon) incident.

In March 1954, a Japanese fishing vessel, the *Fukuku Maru*, was exposed to fall-out from a U.S. thermonuclear test at Eniwetok Atoll. Twenty-three crewmembers suffered from radiation exposure. This event set off a wave of hysteria throughout Japan. This hysteria was so widespread that the U.S. Secretary of State, John Foster Dulles,

⁴⁵ Department of State, "The Outlook for Nuclear Weapons Production in Japan," 6.

⁴⁶ *Ibid.*, 6.

stated that Japan had caught a "nuclear allergy."⁴⁷ The Japanese public feared that radiation might reach the mainland and that its tuna supply might have been contaminated by American nuclear tests.

This hysteria was further fueled by a movie entitled "Ashes to Death" which came out four months after the incident. This movie was based on the *Fukuku Maru* incident, but it contained frequent flashbacks to Japan's wartime nuclear experience at Hiroshima, thereby stimulating adverse feelings toward nuclear weapons.⁴⁸ The U.S. decided to compensate the crewmen with two million dollars and subsequently launched a campaign to diminish this "nuclear allergy." Nevertheless, after this incident, Japanese citizens became more vocal in their opposition to nuclear weapons than they had been during the early 1950s.

Even if the Japanese government had desired to pursue overt nuclear weapon production, public aversion to nuclear weapons would have probably prohibited it. Evidence of a division between Japanese policy makers and the public was reported in a State Department document:

The government evidently feels that little is to be gained by openly contesting this explosive issue at the present time inasmuch as the training of nuclear scientists and technicians, exploration for uranium ore, research, and development of industrial capacity for producing nuclear reactor equipment constitutes useful preliminaries for nuclear weapons production.

⁴⁷ Endicott, Japan's Nuclear Option, 91.

⁴⁸ Department of State, "New Atomic Film Promises to Stimulate Further Popular Interest," 23 July 1954, 1.

These preparations have both public approval and economic justifications under the banner of peaceful uses of nuclear energy.⁴⁹

This quotation suggests that United States policy makers believed that Japanese policy making elites may have had intentions to pursue nuclear weapons research under the auspices of civil nuclear power generation. Domestic aversion to nuclear weapons, however, likely inhibited Tokyo from pursuing overt nuclear weapons production. In other words, mass public sentiments may have caused Japanese policy makers to pursue civil nuclear policies that have a dual-use function. By doing so, Japanese intentions would appear benign, yet these activities would allow the elites to satisfy any potential need for nuclear weapons production without provoking the wrath of the general populace or the world.

b) Energy Autonomy

As an island nation poor in natural resources, Japan is acutely aware of its dependence on external suppliers to satisfy domestic energy consumption requirements. Securing a dependable supply of natural resources has increased in importance with the rise of industrialization in this century. With industrial output low during the 1950s Japan was nearly self-sufficient in natural resources, relying primarily on coal, hydropower,

⁴⁹ Department of State, "The Outlook for Nuclear Weapons Production in Japan," ii.

firewood, and charcoal. During the 1960s, however, industrialization caused a dramatic rise in energy consumption.⁵⁰

Table 1: Percent of Total Energy Supply

Source	1960	1965	1970
Hydro	14.7	11.3	6.4
Coal (Domestic)	43.9	21.5	9.1
Coal (Import)	6.6	8.5	12.4
Oil (Domestic)	0.5	0.0	0.0
Oil (Import)	33.4	57.6	70.9
Nuclear	0.0	0.0	0.3

Source: Energy Policies and Programs of IEA Countries, in Ronald A. Morse ed., The Politics of Japan's Energy Strategy (Berkeley: Institute of East Asian Studies, 1981), 161.

Table 1 demonstrates the extent to which Japan was dependent on external suppliers of natural resources during the 1960s. It indicates that in the early 1960s, Japan imported forty percent of the natural resources used for energy production. In 1965, Japanese imports increased to 66 percent. Imports reached a level of eighty-two percent by 1970, which suggests that Japan was at the mercy of external suppliers to provide for Japan's domestic energy consumption needs. Japan's interest in nuclear power is justified by this dependence on foreign suppliers. A robust autonomous nuclear power program would allow Japan to domestically satisfy much of its energy demand.

The pursuit of an indigenous nuclear energy supply appears to have been a prime motivation for Japan to begin nuclear energy research in the early 1950s. In January 1954, Nakasone Yasuhiro preached Japan's need for energy autonomy to obtain a 300 million yen science and technology budget, three-quarters of it earmarked for nuclear

⁵⁰ Morse, Politics of Japan's Energy Strategy, 5.

power. This first atomic power budget passed through the Diet with only cursory debate and became law.⁵¹ The ease with which the first budget passed through the Diet suggests that Japanese elites overwhelmingly supported a nuclear budget with the understanding that the money was going to be used for nuclear power development.

The early stages of Japan's nuclear industry were a disaster. Japan's first gas-cooled reactor did not begin commercial production of power until July 1966 – three years behind schedule and fifty percent over budget. Japanese utility industries removed their financial support for the reactor, and Japan's first reactor also suffered from numerous safety and design flaws. Furthermore, the kilowatt-hour cost of this reactor was nearly twice that of conventional thermal power generating plants.⁵² Japan did not just have problems with its first reactor; it also experienced difficulties in the nuclear industry as a whole. Between June 1959 and March 1964, there were sixty-six work stoppages at Japan's Atomic Energy Research Institute. So unsettling was the labor situation in Japan's nuclear industry that in October 1963 General Electric, lacking confidence in management, ordered the shut down of Japan's first experimental reactor.⁵³ While one might attribute Japan's determination to develop a nuclear industry to the desire to obtain energy autonomy, such problems cannot be overlooked. It would seem that such widespread difficulties might derail other research projects. Given the capital outlay and persistence of

⁵¹ Samuels, The Business of the Japanese State, 238.

⁵² *Ibid.*, 240.

⁵³ *Ibid.*, 241.

the Japanese government, one must at least consider the possibility that energy autonomy may have been only a partial motivation. The inherent dual-use applications of the nuclear power industry may have served to strengthen the determination to implement a nuclear energy program.

D. CONCLUSION

Japan's nuclear energy program began with great hope of providing Japan with an indigenous energy source. Nuclear energy was viewed as means to break Japan's dependence on external suppliers of natural resources, and to allow the nation to be self-sufficient in energy production. Japan's interest in nuclear power appears to have predated Eisenhower's Atoms for Peace speech. Nevertheless Eisenhower's promise to assist with nuclear energy research appears to have been the catalyst enabling Tokyo to implement a robust nuclear energy program. While Japan embarked upon nuclear research with what appear to have been benign intentions, declassified U.S. documents suggest that at some point in the late 1950s senior elites within Japan's Diet developed undeclared motives.

The Japanese public's aversion to nuclear weapons was well documented throughout the 1950s and 1960s. The intentions of Japanese policy elites, however, were blurred after 1957. Even though there was not an overt change in Japanese nuclear policy during the late 1950s, statements by Japanese elites and Tokyo's policy of encouraging scientists to take a more objective view of the effects of nuclear weapons suggest there was a break between public opinion and government policy.

Both internal and external factors affected Japan's nuclear policy. The external factor of Eisenhower's Atoms for Peace speech may have provided the necessary means by which Tokyo could begin a nuclear power program, but the internal factor of Japan's "nuclear allergy" appears to have been more significant in affecting the direction of Tokyo's nuclear policy. In the late 1950s there appears to have been a distinct interest of the elites to pursue nuclear weapons development, or at least to establish a nuclear weapons option. The public's nuclear allergy, however, appears to have caused Tokyo's top leaders to remain silent about their complex intentions. Rather than establishing an overt nuclear weapons program, Tokyo may have intentionally implemented policies that enabled Japan to have an autonomous nuclear energy program with an inherent potential for military applications. By doing so Tokyo could pursue nuclear weapons-related research under the banner of the peaceful uses of nuclear energy without international or domestic condemnation. Even though Japan appears to have moved toward the capability of producing nuclear weapons during the 1950s and early 1960s, its society-wide "nuclear allergy" appears to have stopped Tokyo from pursuing nuclear weapons production.

III. 1964-1976: THE NPT DEBATE

A. INTRODUCTION

In the 1960s, United States nonproliferation objectives were articulated in an Arms Control and Disarmament Agency report which stated that:

New nuclear capabilities, however primitive and regardless of whether they are held by nations currently friendly to the United States, will add complexity and instability to the deterrent balance between the US and USSR... preventing the further spread of nuclear weapons is clearly in the national interest despite the difficult decisions that will be required.⁵⁴

To prevent the spread of nuclear weapons, American policy makers helped to draft the nuclear Nonproliferation Treaty. Many American policy makers believed that the NPT would be a tool that would help to dissuade nations from seeking independent nuclear arsenals. While many nations quickly embraced the NPT, others, such as Japan, delayed ratification.

The United States and the Soviet Union considered Japanese participation in the NPT critical to its success.⁵⁵ A State Department document specifically identified Japan as one of four countries that were in line to construct nuclear weapons and stated that the United States should "periodically reassess Japanese nuclear weapon capabilities and

⁵⁴ Arms Control Disarmament Agency, "Report by the Committee on Nuclear Proliferation," 21 January 1965. In Evans Gerakas, David Patterson and Carolyn Yee, eds., Foreign Relations of the United States 1964-1968 Vol 11 (Washington D.C., United States Government Printing Office: 1997).

⁵⁵ Arms Control and Disarmament Agency, "Memorandum for the Members of the Committee of Principles," 25 June 1965, 1-3.

proclivities including possible indications of a covert nuclear program." ⁵⁶ Therefore, there was significant concern within the United States that Japan might pursue nuclear weapon development. If Japan decided to "go nuclear," "the spread of nuclear weapons ... could not be stopped there. A ... Japanese decision to build nuclear weapons would probably produce a chain reaction of similar decisions by other countries."⁵⁷ For these reasons, Japan's signature was considered critical for NPT success.

On the surface, Japan's nuclear allergy made it a perfect candidate to sign the NPT, which it did in 1970. However, beneath the surface, some members of the political elite feared that signing the treaty would eliminate Japan's nuclear options. This is one factor that contributed to a six year delay in treaty ratification.

This chapter focuses on Tokyo's internal debate surrounding ratification of the NPT. Analyzing this debate reveals the changing nature of Japan's nuclear weapons policies from the time the NPT was first proposed in the mid-1960s until its ultimate ratification by Tokyo in 1976.

The chapter is divided into two parts. The first part examines Tokyo's nuclear capabilities and intentions to determine nuclear weapons policies during the time period under study. It suggests that Tokyo pursued deliberate ambiguity as its nuclear policy during this period. The ambiguity was created by the dichotomy that existed between Japan's official policy not to pursue nuclear weapons and its apparent intention and

⁵⁶ Ibid., 15.

⁵⁷ Gerakas, et al. Foreign Relations of the United States 1964-1968 Vol 11.

technical ability to do so. The second part examines internal and external factors that influenced Japan's nuclear policies. It suggests that the internal factor of Tokyo's desire to keep its nuclear weapons options open contributed to the delay in NPT ratification.

B. JAPAN'S NUCLEAR POLICY

1. Capabilities

A declassified Arms Control and Disarmament Agency report written in 1965 estimated that "Japan's capacity to build its own nuclear force (was) a near certainty... Japan could test its first nuclear device as early as 1971 without violating existing reactor safeguard provisions."⁵⁸ Japan's technical ability to build nuclear weapons was not a closely guarded secret. Tokyo made it clear to U.S. policy makers that it had such a capability. Prime Minister Miki told the U.S. Vice President Elect, Hubert Humphrey, that, "Japan of course had the capacity to produce nuclear weapons since it could produce plutonium."⁵⁹ This demonstrates Miki's awareness of the fact that Japan's plutonium energy program provided a latent nuclear weapons option.

In 1967 Prime Minister Sato went as far as commissioning a secret study to determine if it was possible and desirable for Japan to develop independent nuclear forces.⁶⁰ The study concluded that there were "no technical impediments" to developing

⁵⁸ Arms Control Disarmament Agency, "Memorandum for the Members of the Committee of Principles," 25 June 1965, 1.

⁵⁹ Arms Control Disarmament Agency, "U.S.- Japan Relations and Policy Problems in Asia," 13 January 1965, 4.

⁶⁰ Harrison, Japan's Nuclear Future, 8.

such forces because the existing plutonium stocks gave Japan the option of producing nuclear weapons. Subsequently, a mid-1968 study published by the Security Research Council, a think-tank sponsored by the Japanese Defense Agency, concluded that Japan could produce twenty to thirty nuclear weapons per year if its civilian nuclear reactors discontinued power generation and were strictly devoted to the production of plutonium.⁶¹ Thus, by the late 1960s, it is clear that Tokyo had carefully studied its weapons options.⁶²

2. Intentions

Japanese society remained strongly opposed to an autonomous nuclear weapons capability during the 1960s, as it had been the decade before. A 1968 Shukau Asahi poll indicated that 68.9 percent of Tokyo residents were opposed to the development of an independent nuclear arsenal.⁶³ This sentiment was not limited to Tokyo, but represents the national attitude toward nuclear weapons.⁶⁴ Japan's aversion to nuclear weapons was one

⁶¹ Ibid., 8.

⁶² Japan's technical ability to produce nuclear weapons was especially potent because of the possibility that Japan could convert its civilian rocket research into a nuclear-equipped IRBM or even ICBM delivery vehicle. A U.S. ACDA document indicated that "it is probable that Japan's MU-3 space vehicle could be converted to military purposes reaching initial operational capability in the 1967-1969 period. On this basis, Japan is capable of producing and deploying a force of up to 100 IRBMs by 1975." Furthermore, "If the Japanese Government decides to convert this civilian vehicle to military purposes, certain changes in the guidance and control systems, and in the ground support and ground electronic systems would be necessary. These changes would not be drastic and could be completed quickly." Thus, as early as 1965, the United States recognized Japan's technical ability to build and deliver nuclear weapons. (Arms Control and Disarmament Agency, "U.S.- Japan Relations and Policy Problems in Asia," 13 January 1965. p. A14).

⁶³ John Welfield, Japan and Nuclear China (Canberra: Australian National University Press, 1970), 42.

⁶⁴ A nationwide Asahi Shimbun poll taken in 1969 indicated that 66 percent of Japanese citizens were opposed to nuclear weapons. (Welfield, Japan and Nuclear China, 42).

factor that influenced Prime Minister Sato to pledge not to manufacture, possess, or introduce nuclear weapons into Japan.⁶⁵ Thus, in drafting the NPT, U.S. policy makers thought that widespread opposition to nuclear weapons in Japan would cause Tokyo to quickly sign and ratify the NPT.⁶⁶

While there were some Japanese political leaders that considered an independent nuclear arsenal a viable option, most mirrored public sentiment. One author writes, "When the subject is nuclear weapons, the ... parties all agree, no nuclear weapons for Japan."⁶⁷ While some parties were more outspoken than others on this issue, all agreed that Japan should not develop its own nuclear arsenal.⁶⁸ Thus, opposition to nuclear weapons in the political elite likely contributed to the signing of the NPT in 1970. Japan's failure to ratify the NPT until 1976, however, suggests that concerns about the implications of NPT ratification outweighed domestic and political elite opposition to such weapons for several years.

⁶⁵ This is referred to as the Three Non-Nuclear Principles pledge, which was formalized by the Diet on 24 November, 1971.

⁶⁶ "If a Nonproliferation Treaty comes into being, Japanese signature is a virtual certainty. The Japanese public will not stand for Japanese non adherence." (White House Documents, "Japanese Attitudes Toward Non-Proliferation," 15 March 1967), 1.

⁶⁷ Welfield, Japan and Nuclear China, 78.

⁶⁸ The 1972 platforms of all Japan's political parties espoused their aversion to nuclear weapons. The ruling Liberal Democratic Party stood for a series of piecemeal arms control measures that would create an international political atmosphere in which extensive nuclear arms control measures could be initiated. The Japanese Socialist Party was a steadfast advocate of unarmed neutrality while the Komeito desired total disarmament and the worldwide abolition of nuclear weapons. The Democratic Socialist Party stood for internationally verifiable disarmament and a moratorium on nuclear tests, while the Japanese Communist Party stood for abolition of the U.S. - Japanese security treaty, a step that would have eliminated the nuclear umbrella provided by the United States. (Endicott, Japan's Nuclear Option, 79).

Tokyo's investigation of its nuclear weapons options from 1964 to 1970 suggests that some policy elites considered nuclear weapons production an important option for Japan to maintain. Such investigations laid the foundation for what appears to have been a shift in Tokyo's nuclear policy during the 1970s.

With the signing of the NPT in 1970, Tokyo's nuclear weapons policies appear to have changed. Its delay in ratification was inconsistent with its official nuclear weapons policies. If Tokyo was as opposed to nuclear weapons as its political rhetoric might have suggested, NPT ratification would have come quickly. Tokyo, however, took six years to ratify the treaty. Furthermore, from 1970 to 1976, Japan moved toward developing specific capabilities applicable to nuclear weapons production, such as reprocessing facilities that can extract plutonium and rockets that could be utilized as ballistic missile delivery vehicles. Tokyo's nuclear policy appears ambiguous after 1970. This ambiguity appears to have been deliberate – that is, Tokyo refused to rule out its nuclear weapons options.

C. CAUSAL FACTORS

1. External Factors

Several external factors influenced Tokyo's decision to join the nuclear Nonproliferation Treaty. These include threats that stem from nuclear proliferation, U.S. influence, and potential isolation from the international community.

a) *Nuclear Proliferation*

Nuclear proliferation overseas may have posed a threat to non-nuclear Japan. A 1966 assessment of Japan's proliferation potential argued that "Japan could not afford to see Sukarno, Nasser and Castro obtain nuclear weapons while Japan did not."⁶⁹ This assessment suggests that as other nations obtained nuclear weapons, there would be increased pressure on Japan to actualize its latent nuclear arsenal. Therefore, U.S. policy makers believed that Tokyo might accept the NPT in order to avert nuclear proliferation.

China's 1964 nuclear test provided a example of how one nation's nuclear weapon development may have influenced Japan's NPT debate. Following China's first nuclear test, there was some debate in Japan whether China's nuclear weapon development posed a threat to Japan. In 1965, Hubert Humphrey, the U.S. Vice President Elect, told Prime Minister Sato that "he had received some impression since the explosion of a Chinese Communist nuclear device, Japan and other countries ... might have been giving consideration to becoming nuclear powers in their own right."⁷⁰ China's nuclear test did not pose an immediate threat to Japan because early Chinese nuclear fission devices were primitive and China did not have a delivery system that could be used to threaten Japan.⁷¹ Furthermore, China took diplomatic initiatives that could be construed as implying that its

⁶⁹ Department of State, "Am Emb Tokyo, Telegram No 2968," 24 February 1966, 2.

⁷⁰ Department of State, "U.S.- Japan Relations and Policy Problems in Asia," 13 January 1965, 3.

⁷¹ "Communist China has simply not been regarded as a threat not only because of its limited capability for aggression against Japan but also because most Japanese do not regard the Chinese as aggressively inclined toward Japan." ("Report by the Committee on Nuclear Proliferation" in Gerakas, et al. Foreign Relations of the United States 1964-1968 Vol 11).

nuclear weapons posed only a limited threat to Japan.⁷² However, one can assume that if China had become bellicose toward Japan, Tokyo might have pursued nuclear weapons to defend itself.⁷³ Even though China did not necessarily pose a direct threat, Japan was pleased that it had a commitment for nuclear protection from the United States.⁷⁴ Thus one can deduce that China's nuclear weapon capability may have influenced Japanese attitudes toward NPT acceptance.

b) U.S. Intervention

Following India's 1974 plutonium-based nuclear test, the United States proposed policies to eliminate plutonium-based nuclear power programs. The United States announced in 1976 that it didn't see reprocessing as a necessary step in the nuclear fuel cycle. Due to bilateral agreements, Japan was subject to United States intervention in its nuclear power program. Thus if the United States did not want Japan to maintain

⁷² In a statement after its first nuclear weapon explosion, the Chinese government declared that: "The Chinese Government hereby solemnly proposes to the governments of the world that a summit conference of all the countries of the world be convened to discuss the questions of the complete prohibition and thorough destruction of nuclear weapons, and that as the first step, the summit conference conclude an agreement to the effect that the nuclear powers and those countries which may soon become nuclear powers undertake not to use nuclear weapons either against non-nuclear countries and nuclear-free zones or against each other." ("Statement of the Government of the People's Republic Of China," 16 October 1964, in John Lewis and Xue Litai, China Builds the Bomb (Stanford, Stanford University Press: 1988), 241-243).

⁷³ "There is some possibility (though no certainty) that Japan would build up an independent nuclear capability if 1) China achieves a clear capability of nuclear attack on Japan. 2) If Peiping pursues truculent and aggressive policies toward Japan and 3) if one or more other Asian nations undertake to achieve an independent nuclear capability." ("Report by the Committee on Nuclear Proliferation" in Gerakas, et al. Foreign Relations of the United States 1964-1968 Vol 11).

⁷⁴ The Counselor of the Japanese Embassy in Washington, Mr. Kanazawa, stated that, "the Chinese nuclear program does not really concern Japan too much, especially since the U.S. has satisfactory treaty obligations with Japan." (Arms Control and Disarmament Agency, "Nonproliferation," 6 July 1965, 3.

reprocessing facilities, Japan would be required to submit to U.S. decisions. Without a reprocessing capability Japan would have to import uranium for fuel, leaving Japan dependent on foreign-supplied uranium and thereby subject to the economic constraints of its availability.

The push by the United States to eliminate reprocessing facilities left Japan with limited options. Article III of the NPT states that only NPT signatory members can buy uranium.⁷⁵ Hence, Japan had to sign the NPT to insure an unimpeded uranium supply. In 1976, however, the United States backed away from its demands and permitted Japan to complete production of its indigenous reprocessing facility, which allowed Japan to further develop its plutonium fuel cycle. This experience may have conveyed the impression to Japanese political leaders that ratifying the NPT would insure a continuous uranium supply in the future.

c) Diplomatic Isolation

Japan's ratification of the NPT may have been driven partly by the fear of diplomatic isolation. According to Article III of the NPT, the failure to ratify the NPT would preclude Japan from receiving aid for peaceful uses of atomic energy from member

⁷⁵ "Each State Party to the Treaty undertakes not to provide: (a) source or special fissionable material, or (b) equipment or material especially designed or prepared for the processing, use or production of special fissionable material, to any non-nuclear-weapon State for peaceful purposes, unless the source or special fissionable material shall be subject to the safeguards required by this article." "Treaty on the Non-Proliferation of Nuclear Weapons" Article III section 2 in Leonard S. Spector, Mark McDonough and Evan S. Medeiros, Tracking Nuclear Proliferation (Washington D.C., Carnegie Endowment for International Peace: 1995), 22.

states.⁷⁶ Japan's atomic industry was particularly interested in long term access to uranium, technical exchanges, and enrichment services which would be jeopardized by a delay in NPT ratification. Japan simply did not want to be categorized as a state on the threshold of going nuclear. Thus it needed to ratify the NPT in order to avoid such criticism.

2. Internal Factors

Political elites were concerned about the potential effects of the NPT on Japan's nuclear weapons options. In 1969 Japan's Foreign Ministry prepared a policy study that examined Japan's foreign policy challenges for the 1970s. Portions of this study were leaked to Mainichi Shimbun in 1994 by one of the officials involved. This study concluded that, "regardless of joining the NPT or not, we [Japan] will keep our economic and technical potential for the production of nuclear weapons, while seeing to it that Japan will not be interfered with in this regard."⁷⁷ Japanese spokesmen have confirmed the authenticity of this study, but stated that it was never implemented as policy. Whether it was implemented or not, it demonstrates that Japanese policy makers considered the ramifications of NPT ratification on Japan's nuclear options, thereby suggesting that Japanese political elites placed at least some value on keeping the nation's nuclear options open.⁷⁸ The internal factors that affected Japan's decision to join the NPT included

⁷⁶ Ibid.

⁷⁷ Harrison, Japan's Nuclear Future, 9.

⁷⁸ The NPT itself does not actually foreclose the military option, however. A state may continue to develop peaceful technologies having possible military applications. There are also withdrawal provisions

scientific and elite interest in the pursuit of the peaceful uses of atomic energy, and Japan's aversion to unequal treaties.

a) Peaceful Nuclear Energy Research

One factor influencing Japan's acceptance of the NPT was the concern of Japanese political elites that NPT implementation might adversely affect Japan's peaceful nuclear energy research. In 1967 Prime Minister Miki stated that "the treaty... must not prevent non-nuclear weapons powers from participating in peaceful nuclear development, including the use of explosive devices if they can be distinguished from weapons."⁷⁹ Even though such explosive devices might seem peaceful in nature, maintaining the ability to produce them would have allowed Tokyo to keep its nuclear weapons options open.

b) Unequal Treaties

Japanese reaction to the original draft of the NPT was "unexpectedly vociferous for a nation in which discussion of indigenous nuclear weapon capabilities had long been taboo."⁸⁰ A State Department document indicates that Japanese objections centered on the inequality of the NPT – i.e., it required Japan to sacrifice its nuclear options while the nuclear powers retain nuclear weapons, pending their move toward nuclear disarmament, which is called for in Article VI in the Treaty.

contained within the treaty. Signing the treaty allows the steady development of a peaceful atomic program, thereby enhancing Japan's nuclear options. To this extent, Japan's leaders protected Japan's military options by ratifying the NPT.

⁷⁹ Department of State, "Japanese Reservations Toward NPT," 9 March 1967, 2.

⁸⁰ Ibid., 1.

The primary factor that delayed Japan's ratification of the NPT until 1976 was the commitment in Article II that would have forced Japan to renounce the pursuit of nuclear weapons.⁸¹ Japan's aversion to unequal treaties was historically grounded. With the arrival of Commodore Perry in 1853, Japan was forced to open up to the West and was subjected to unequal trade practices and treaties.⁸² Following the end of the First World War, Japan accepted limits to the size of its navy at the Washington Naval Conference. Britain and the United States were allowed to build five ships for every three built by Japan. To many in Japan, this treaty was unfair. As a result of these experiences, Japan learned to avoid unequal treaties. Thus, Japan's fear of the unequal provisions contained within the NPT was understandable.

Japan's aversion to the unequal provisions contained within the NPT was addressed in a U.S. State Department document which identified Tokyo's concern that the NPT might create a international hierarchy based on the possession of nuclear weapons, thereby placing Japan in a second class category.⁸³ This perception was voiced by Vice-

⁸¹ "Each non-nuclear-weapon State Party to the Treaty undertakes not to receive the transfer from any transferor whatsoever of nuclear weapons or other nuclear explosive devices directly, or indirectly; not to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices; and not to seek or receive any assistance in the manufacture of nuclear weapons or other nuclear explosive devices." NPT Article II. Spector et al. Tracking Nuclear Proliferation, 21.

⁸² This led to the Meiji Restoration of 1868 in which Meiji elites believed that "only through rapid and wholesale modernization could Japan become strong enough to end the humiliation of the unequal treaties imposed in the 1850s and to preserve herself from further depredations by the west." Merrion Harries, Soldiers of the Sun (New York, Random House: 1991), 7.

⁸³ "Japan is much more concerned that by accepting the NPT it will be forced into the position of a second class power in both political and economic terms." Department of State, "Japanese Reservations toward NPT," 1.

Foreign Minister Takesho Shimoda, who in 1966 told a press conference, "Japan cannot agree to such a big power-centered approach, implying as it does that the nuclear powers would not be required to reduce their capabilities or stockpile, while the non-nuclear powers would be barred in this treaty from having nuclear weapons."⁸⁴ According to one author, "all four of Japan's opposition parties oppose the treaty as does a large number within the ruling LDP" because of the unequal provisions contained within the NPT.⁸⁵ These statements convey Japan's concern with the unequal provisions within the NPT.

One provision of concern in the NPT was article III, which required signatories to adhere to international safeguards.⁸⁶ Japan was already subjected to one third of all IAEA inspections. Japan's nuclear industry feared that as the number of its reactors increased, the number of IAEA inspections would increase. Increased frequency of inspections would leave Japan easy prey to industrial espionage and might cause Japan to suffer commercial disadvantages.

From 1970 to 1976 Japanese political leaders negotiated with the IAEA to obtain special privileges from the IAEA. Such privileges included being allowed to conduct a self-inspection of its nuclear facilities and to develop an indigenous reprocessing capability. These were privileges not awarded to many other countries. Ultimately in 1976,

⁸⁴ Harrison, Japan Nuclear Future, 7.

⁸⁵ Williams, Nuclear Proliferation and International Politics, 35.

⁸⁶ The unequal nature of this provision within the treaty was addressed in a report published by the Ministry of External Affairs. It states that the details of the NPT proposal create an unfair status quo by applying inspections to Japan on an unequal basis. (Williams, Nuclear Proliferation International Politics, 36).

the IAEA acquiesced to Japanese demands. The IAEA reduced the number of inspections of Japanese nuclear facilities and agreed to limit its inspections to strategic points in Japan's nuclear fuel cycle.⁸⁷ Subsequently Japan ratified the NPT in 1976.

Through IAEA acceptance of these demands, Japan successfully mitigated the unequal provisions contained within the NPT. More importantly, by taking these steps, political elites ensured the survival of Japan's plutonium reprocessing and the development of an indigenous plutonium-based fuel cycle. One reason why Japanese elites may have demanded the retention of a reprocessing capability is that such a capability allows Japan to extract the plutonium that could be used for nuclear weapon production. By ensuring the retention of a reprocessing ability, Japan kept its nuclear weapons options open.

D. CONCLUSION

Internal and external factors influenced the direction of Japan's civil and military nuclear policies from 1964 to 1976 as is apparent from the debate in Japan over NPT acceptance. External factors, such as nuclear tests by China and India, may have caused concern in Japan about the spread of nuclear weapons, but apparently neither Chinese nor (prospectively) Indian or Korean nuclear weapons were perceived to be a threat to Japan. Furthermore, it took two full years after India's test for Japan to ratify the NPT, suggesting that Tokyo did not perceive nuclear proliferation to be an immediate threat requiring decisive action. Diplomatic pressure by the United States had the potential of

⁸⁷ It is interesting to note that Japan ratified the NPT only after the U.S. promised not to interfere with Japan's pursuit of an independent reprocessing capability within its civilian nuclear power program. (Harrison, Japan's Nuclear Future, 7).

influencing Japan to sign the NPT, but the U.S. backed off its demands that Japan abandon its development of a reprocessing facility. Therefore external pressure exerted by the United States had only a minimal impact on Japan's actions. Tokyo's fear of becoming an international pariah also affected Japan's decision to join the NPT. After all, other NPT member states would not have been allowed to sell uranium to Japan if Tokyo did not ratify the NPT. Certainly this argument has some merit. However, it does not appear to have been the driving factor influencing Japan's decision to ratify the NPT. If it had been a major concern, one can assume that Tokyo would have ratified the NPT soon after it was signed. Instead, Japan's leaders waited six years to ratify the treaty.

Internal factors influenced Japan's ratification of the NPT. The widespread aversion to nuclear weapons in Japan certainly played a influential role in the government's decision to both sign and ratify the NPT. Due to the deep-seated aversion to nuclear weapons, Japan's population would not have allowed the government to fail to ratify the NPT. Yet Japan's "nuclear allergy" does not appear to have been the main impetus behind Japan's ratification in 1976. Instead, the desire of the political elites to mitigate the unequal provisions of the NPT appears to have been the primary factor that influenced Tokyo's decision on ratification. Doing so ensured the perpetuation of nuclear options under favorable political auspices.

The NPT was considered an unequal treaty in part because it required the non-nuclear-weapon parties to renounce their nuclear options. Japan carefully negotiated with the IAEA to obtain special provisions not awarded to other non-nuclear-weapon states. This negotiating process took several years and ultimately gained Japan the right to keep

its nuclear options open, thereby making the NPT an "equal" treaty for Japan. Once the IAEA acquiesced to Japanese demands, Japan ratified the NPT. Hence, it appears that Japan's desire to keep its nuclear options open was the driving factor behind its ratification of the NPT.

IV. 1976-1998: THE PLUTONIUM PROGRAM

A. INTRODUCTION

This chapter examines Japan's nuclear weapons capabilities and intentions from 1976 to the present to determine Japan's nuclear policy. To what extent have Japan's stockpiling of plutonium and its development of a technical ability to build long range missiles, including ICBMs, derived from deliberate efforts to cultivate nuclear weapons options? To what extent can these options be explained as the natural outgrowth of technological innovations and other non-military purposes, such as pursuing greater energy independence and space-based telecommunications? It answers the question, what factors have influenced the direction of Tokyo's nuclear policies since 1976? It argues that even though autonomous nuclear power production has been a long term goal of Japan's policy makers, internal factors have influenced Japanese elites to pursue the development of dual-use technologies that allow Tokyo to imbed nuclear weapons options within its nuclear energy and space programs.

This chapter is divided into two sections. The first part examines Japan's nuclear policy from 1976 to the present and suggests that Japanese elites deliberately acquired key capabilities allowing Japan to become a virtual nuclear weapons state. The second section analyzes the effects of internal and external factors on Japanese nuclear policies and suggests that a combination of internal and external factors probably cause Tokyo to keep its nuclear weapon options open.

B. JAPAN'S NUCLEAR POLICY

1. Intentions

While Japan's declared nuclear weapons policy is clearly defined, its policy actions affecting its nuclear industry raise concern over Japan's true nuclear ambitions. Policy decisions that influence Japan's capability to produce nuclear weapons may, in other words, throw light on Japanese intentions.

There have been significant developments in Japan's Fast Breeder Reactor program since 1976. Developments associated with Japan's FBR, "Monju," are important to monitor because the FBR exemplifies Japan's plutonium-based nuclear energy policy. Monju is a symbol of the continuation of Japan's plutonium-based nuclear energy policy, and policy decisions that affect Monju indicate the direction of Japan's nuclear energy policy. More importantly, because Monju produces more plutonium than it consumes, it provides Japan with fissile material that could be used for nuclear weapon production. While Monju is not Japan's sole source of plutonium, it is Japan's only nuclear power plant that produces a high concentration of Pu-239.⁸⁸ Therefore, if Japan were to shut down Monju, it would be obliged to rely on reactor-grade plutonium, thereby making the production of high-quality nuclear weapons more difficult.

FBR development was divided into four stages: experimental reactor development, prototype reactor development, demonstration reactor displays, and ultimate commercialization. Japan's experimental reactor, "Joyo," went critical in 1977 and was

⁸⁸ U.S. Congress, Office of Technology Assessment, Technologies Underlying Weapons of Mass Destruction, 159.

converted for use as a testing facility in 1982. Monju was Japan's prototype FBR and began operation in 1994.⁸⁹ During the 1970s and 1980s, FBR activities accounted for about one third of the total budget for the Power Reactor and Nuclear Fuel Development Corporation (PNC), which was about one half of the entire nuclear budget. In 1979 the construction costs of Monju were estimated to be 400 billion yen, which was about three times as expensive as that of a typical commercial nuclear plant. By 1991 Japan's FBR budget exceeded the nuclear budgets of all other advanced nuclear countries.⁹⁰ Japan's pursuit of a FBR has been one of Japan's most uneconomical industrial pursuits. Thus one must question Japan's true intent. If nuclear power generation were Japan's goal, then Japan could have produced several LWRs for the price it cost to build Monju. If Japan's intentions involve the pursuit of options other than electricity generated through nuclear power, the merits of an FBR are clear.

During the 1980s the United States and most nations around the world scrapped their FBR programs and adopted a policy of uranium-based nuclear energy because of the expense associated with FBR development, technical difficulties, and proliferation, safety, and environmental concerns. Only France and Japan remained committed to an FBR program. France recently stated that it intends to close down its "Super-Phoenix" FBR.⁹¹ This leaves Japan as the only nation committed to the pursuit of a plutonium-based nuclear

⁸⁹ Skolnikoff, et al. International Responses to Japanese Plutonium Programs, 3.

⁹⁰ *Ibid.*, 3.

⁹¹ Denis Cosnard, "Nuclear Power – Christian Pierret Tries to Reassure Japan over French Policy" Paris Les Echos in FBIS-EAS-97-335, 1 Dec 97.

energy program. Japan's FBR has experienced several accidents since it was first opened, but Japan remains committed to FBR development. Japan's most recent accident in Monju was a sodium leak in 1995 which has caused Japan to "temporarily" cease operations at the reactor. Japan has no intention to permanently close Monju.⁹² This demonstrates that in the face of international concern and domestic unpopularity over FBR programs, Japan's government has continued to pursue FBR development, thereby continuing its pursuit of a plutonium-based nuclear energy program, which could serve as the foundation for a nuclear weapons program.

Plutonium reprocessing facilities use dangerous chemicals to extract plutonium from spent nuclear waste. The plutonium extracted can be converted into a mixed oxide (MOX) powder and used to refuel LWRs. Reprocessing has long been regarded in Japan as a prerequisite for a strong and independent nuclear power program. Japan's commitment to reprocessing was originally justified as a way to reduce its dependence on imported uranium. Without reprocessing facilities, Japan would not have an autonomous nuclear energy program. More importantly, the elimination of reprocessing facilities in Japan would affect its indigenous capability to extract plutonium from spent nuclear fuel, thereby seriously hampering potential nuclear weapons options. Hence, policy decisions that affect Japan's reprocessing facilities are important to monitor because they affect Japan's nuclear weapons options.

⁹² "What Fast Breeder Reform Means" Tokyo Kagaku Koguo Nippo in FBIS-EAS-98-013, 16 Oct 97.

Japan's first reprocessing plant was constructed at Tokai-Mura during the 1970s. Although completed in 1974, it did not begin full operation until 1981. Its reprocessing capabilities are limited. Japan therefore established plans in 1981 to build a second reprocessing facility at Rokkasho-Mura that could reprocess 800 tons of spent fuel a year.⁹³ This facility will provide Japan with a facility that is capable of handling all domestic reprocessing needs. It is currently under construction and will be opened around 2010. It is important to note that reprocessing at Rokkasho is expected to cost forty percent more than reprocessing spent fuel in Europe. Hence, Japan's utility industries could save billions of dollars if they abandoned further construction of Rokkasho and instead imported plutonium from Europe. Japan's policy decisions surrounding reprocessing demonstrate that Japan desires to maintain this capability regardless of the cost, a circumstance that suggests that Japan's true intentions may encompass purposes in addition to generating electricity.

Japan's reprocessing facilities have separated more plutonium than those of any other non-nuclear weapon state, and Japan is the only non-nuclear-weapon state party to the NPT with plans to continue separating plutonium.⁹⁴ Between 1981 and 1995, Tokai-Mura separated 5.7 metric tons of plutonium, enough to make 1000 nuclear weapons.⁹⁵ Today, "the Tokai reprocessing plant can produce roughly 450 kg of fissile plutonium per

⁹³ Kenneth Solomon, Plutonium for Japan's Reactors (Santa Monica: RAND, 1993), 5.

⁹⁴ Albright, et al. Plutonium and Highly Enriched Uranium, 1996, 177.

⁹⁵ Frank von Hippel and Suzanne Jones, "The Slow Death of the Fast Breeder" Bulletin of the Atomic Scientists (Sep/Oct 1997): 47.

year, which could in principle be used to produce 40-50 nuclear bombs per year."⁹⁶ The amount of plutonium that Japan has extracted allows one to hypothesize about Japan's nuclear energy program in two ways. If Japan's nuclear policy was to keep specific reactors to support a nuclear weapons option or the pursuit of an autonomous plutonium-based nuclear energy program, then one could appreciate why Japan has insisted on keeping Tokai open. If, however, Tokyo was motivated solely by economic considerations, then Japan could pursue a non-indigenous nuclear energy program much cheaper than its current program. When one looks macroscopically at Japan's policies affecting reprocessing, FBRs, and the production of dual-use systems convertible to nuclear weapons research, then Japanese intentions appear to be more complex than simply electric power generation. One possible way to explain Tokyo's policies is that Japanese elites have deliberately pursued the development of dual-use systems that inherently allow for nuclear weapons options.

2. Capabilities

Throughout the 1960s secret U.S. assessments, recently declassified, held that Japan would have a nuclear weapons option within a few years.⁹⁷ Previous sections of this thesis have demonstrated that Japan met the established requirements to assemble a nuclear weapon, given the necessary materials. Thus, rather than analyzing Japan's ability to assemble a nuclear weapon, this section will analyze specific dual-use innovations

⁹⁶ Skolnikoff, et al. International Responses to Japanese Plutonium Programs, 23-24.

⁹⁷ See: "Report by the Committee on Nuclear Proliferation" in Gerakas, et al. Foreign Relations of the United States 1964-1968 Vol 11 for discussion of Japan's capabilities.

applicable to the delivery of nuclear weapons and to civilian industry. An examination of such innovations reveals that Tokyo may have deliberately pursued indigenous development of technologies that could be used for nuclear weapons delivery. Therefore, becoming a virtual nuclear power may have been one of the objectives of Japan's elites.

The timing of major advances in Japan's aerospace industry closely coincides with Japan's acquisition of dual-use nuclear technology. As Japan's nuclear industry has grown, so has Japan's aerospace industry, specifically the satellite program. This has led some to suspect that Japan has sought technological innovation in its aerospace industry in order to have long range ballistic missiles that could provide a nuclear weapon delivery capability.⁹⁸

Technological autonomy has consistently been a goal for its aerospace industry. According to Japan's "Long Range Vision for Japanese Space Policy Development," "it has been recognized that the line of Japanese space development should be gradually changed to a way of self-reliant development ... Development of our own technology is indispensable to assure her [Japan's] self reliance in the space program."⁹⁹ Japan began research on rocket technology in the 1950s. It was not until February 1970, however, that Japan launched a twenty-four kilogram satellite, making Japan the fourth country to

⁹⁸ Harrison, Japan's Nuclear Future, 24.

⁹⁹ "Long-Range Vision for Japanese Space Policy Development" (Choki-vision 2) SAC, July 1983, Unofficial Translation, pg 4-5 as quoted in, Joan Johnson Frees, Over the Pacific, (Dubuque: Kendall/Hunt Publishing, 1993), 94.

launch a satellite with its own rocket.¹⁰⁰ In the last twenty years, Japan has used eleven types of rockets to launch over fifty satellites into various orbits.¹⁰¹ Frequent launches have allowed Japan to gain rich experience and reach a world-class level in all areas of rocket technology.¹⁰²

From 1969 through 1984 Japan and the United States had an agreement that allowed Japan to obtain American space technology that could be used for military applications. The "US willingness to grant export licenses in many key areas of technology with military applications, such as inertial guidance, spacecraft stabilization, and cryogenic propulsion, was sharply curtailed."¹⁰³ Nevertheless, by the time the U.S.-Japan space agreement ended in 1984, Japan "had enough experience with rocket technology to develop an autonomous capability."¹⁰⁴ Therefore, by 1984 Japan could independently launch satellites. This is significant because it demonstrates Japan's gradual move toward autonomy in its space program. More importantly, many of the technologies that Japan developed are directly convertible to ballistic missile programs.

In 1969 Japan produced the world's first batch of high-intensity high-standard carbon fiber, from which came carbon/carbon compound. Carbon/carbon is resistant to

¹⁰⁰ Fang Tung, "A Warning Against Japan's Rising Nuclear Missile Might" Hong Kong Hsien-Tai Chun Shih (Conmilit) in FBIS-CHI-98-006, 11 Nov 97.

¹⁰¹ Ibid.

¹⁰² Ibid.

¹⁰³ Harrison, Japan's Nuclear Future, 23.

¹⁰⁴ Ibid., 23.

high heat, burn erosion, and heat shock and has been used in the production of ICBM warheads.¹⁰⁵ This dual-use technology is critical to the production of ballistic missiles that re-enter the atmosphere as well as rockets that use re-entry technology. More recently, Japan has developed a way to simulate the high-speed airflow around different designs of rockets by using a "numerical wind tunnel."¹⁰⁶ This allows Japan to test and improve rocket designs without having to conduct actual launches. Not only does this technology allow Japan to limit the number of test launches; it also provides Japan with the option to design long-range ballistic missiles for possible weapons delivery purposes, such as IRBMs and ICBMs. Furthermore, Japan's advanced computer industry has developed rocket control technology for the TR-1A and M-5 rockets. "Japan was first to use fiber-optics to make optical-path laser-gyros, to make a high-precision, simple, and reliable control system applicable to not only rockets, but also guided missiles."¹⁰⁷ These advances allow Japan to carefully control the guidance systems, which are critical for missile accuracy. These advances demonstrate that Japan's improvements in its rocket program inherently allow Japan to have ballistic missile options.

Table 2 provides a numerical breakdown of Japan's successful rocket launches since 1966. It demonstrates that around 1976 the frequency of Japanese launches increased. During the period 1966-1976 Japan had five successful launches. During the

¹⁰⁵ Fang Tung, "A Warning Against Japan's Rising Nuclear Missile Might."

¹⁰⁶ Justin Mullins, "Faith, Hope and Rocketry" New Scientist (Jan 27, 1996): 38. Online: LEXIS NEXIS. Library: NEWS. File: ALLNWS 11 Jan 98.

¹⁰⁷ Fang Tung, "A Warning Against Japan's Rising Nuclear Missile Might."

next ten-year period, Japan had twenty-four successful launches. While this can be attributed to routine technological innovation, such a dramatic increase suggests that there may be a causal factor driving the increase in launches after 1976. By increasing the frequency of rocket tests, Japan probably gained valuable insight into the technologies required for ballistic missile development.

Table 2: Japanese Rocket Launches 1966-1998

NAME	FIRST USE	LAST USE	NUMBER LAUNCHES	SUCCESSFUL LAUNCHES
L-4S	1966	1970	5	1
M-4S	1971	1972	4	3
M-3C	1974	1979	4	3
M-3S	1977	1984	7	7
M-3S2	1985	1995	8	7
M-5	1997		1	1
N-1	1975	1982	7	6
N-2	1981	1987	8	8
H-1	1986	1990	7	7
H-2	1994		5	5
J-1	1996		1	1

Source: Fang Tung, "A Warning Against Japan's Rising Nuclear Missile Might" *Hong Kong Hsien-Tai Chun Shih* (Conmilit) in FBIS-CHI-98-006, 11 Nov 97.

Experts in the field of rocket science recognize that Japan's rocket technology gives Japan a de facto missile option. Their central argument is that if the rocket-delivered satellite were exchanged for a nuclear warhead, with a changed flight path, it would be a ballistic missile that could strike land targets.¹⁰⁸ Vladimir Belous, a Russian military expert and retired Major General, states that "the H-II rocket, which Japan uses to launch satellites, matches the capacity of the Minuteman II intercontinental ballistic missile of the United States, except that it uses liquid hydrogen as fuel. [And the] J-1 rocket ... using solid fuel is almost on a par with intermediate range ballistic missiles in terms of

¹⁰⁸ Harrison, *Japan's Nuclear Future*, 21-24.

capability."¹⁰⁹ In September 1991, the TR-1A rocket was fired for the first time using a medium precision fiber-optic gyro in its control system. "Calculations show that if its 'test module' [were to be] exchanged for a 700 kilogram warhead, the rocket becomes a mobile tactical missile with a range of over 750 kilometers."¹¹⁰ Japan's H-II rocket has even greater potential. If its engine casing were to be "exchanged for a carbon fiber compound material, ... it needs only a booster to become a single-stage solid rocket that can fire a two ton warhead with a range of 5500 kilometers."¹¹¹ Thus, these rocket systems allow Japan to have both a medium and long range weapons delivery option.

Just as energy independence has been a goal for Japan's nuclear industry and autonomous rocket technologies have been a goal of its space industry, Japan's aerospace industries have sought the independent production of a high performance fighter aircraft. Certain high-performance fighter aircraft have the capability to deliver a weapon of mass destruction. The Office of Technology Assessment identifies the F-15 *Eagle* and F-16 *Falcon* as aircraft that have such a capability.¹¹² Japan has variants of both of these

¹⁰⁹ Akira Komoto, "Nuclear Armed Japan? Not Now, Not in Future" Daily Yomiuri (April 17, 1996). Online: LEXIS-NEXIS. Library: NEWS, File: CURNWS, 11 Jan 98.

¹¹⁰ Fang Tung, "A Warning Against Japan's Rising Nuclear Missile Might."

¹¹¹ Quotation taken from: Fang Tung, "A Warning Against Japan's Rising Nuclear Missile Might" (It should be recalled that 5,500 kilometers is the minimum range definition for ICBMs used by Washington and Moscow in the SALT and START negotiations).

¹¹² U.S. Congress, Office of Technology Assessment, Technologies Underlying Weapons of Mass Destruction, 242 (Table 5-10).

aircraft.¹¹³ Japan's variant of the F-16, the F-2, provides it with all the technology necessary to have an independent high-performance fighter that is exempt from U.S. influence.

Politicians and industrialists began discussions about Japan's F-2 in the mid-1970s. From the beginning, Japanese aerospace industries considered that its production would give Japan the ability to indigenously produce a high performance aircraft.¹¹⁴ In the mid-1980s the U.S. aerospace industries recognized that the F-2 would bring unwanted competition. Therefore they encouraged U.S. policy makers to intervene on their behalf. After three years of "difficult" negotiations, Japan and the U.S. agreed to jointly build the F-2 based on a "minimally modified" F-16. Subsequently, United States aerospace industries transferred technology to Japan that would enable production. Rather than produce a clone of the F-16 as originally planned, Japan radically changed the design to "constitute a virtually all-new world-class aircraft developed largely by Japanese industry."¹¹⁵ Japan's modifications have allowed it to enter the elite ranks of nations that have the ability to autonomously develop advanced high-performance fighter aircraft. Japan's modifications preclude the U.S. from interfering with its production in all areas but

¹¹³ Japan jointly produces the F-15 with the United States. This production agreement however does not allow Japan to have all the technologies that would be necessary for autonomous production of a high performance aircraft. Should the U.S. decide to do so, it could nullify production agreements of the F-15, which would force Japan to stop its production.

¹¹⁴ Mark Lorell, Troubled Partnership (Santa Monica: RAND, 1995), 1.

¹¹⁵ *Ibid.*, 3.

its engines.¹¹⁶ Hence Japan successfully obtained the technology to develop a high performance aircraft that has the capability of delivering a weapon of mass destruction.

Japan's unique dual-use technological innovations and persistence in pursuing plutonium reprocessing, an autonomous FBR program, a large plutonium stockpile, and missiles and aircraft that could be used as delivery systems, while turning a deaf ear to international concerns, suggest that Japan's policy since the mid 1970s has been to pursue the capabilities necessary to have genuine nuclear weapons options.

Japan's nuclear weapons-applicable technological capabilities appear to have been developed purposefully by the Japanese elites. Some may consider Tokyo's decision to pursue re-entry technology associated with a rocket program benign in nature.¹¹⁷ Nevertheless this technology provides Japan with a prerequisite technology for ballistic missile delivery systems. Similarly, Japan's plutonium stockpile might be considered a peaceful outgrowth of nuclear energy production, but it also provides Japan with the fissile material necessary for nuclear weapons production. In the face of international criticism Tokyo has continued to import plutonium even though such imports are not needed to fuel Japan's reactors.

¹¹⁶ Ishikawajima Harima Industries has a license to domestically produce the General Electric F110-129 engine for the F-2. The engine is produced in Japan, thereby giving Japan autonomy in F-2 production.

¹¹⁷ In February 1996 Japan launched an experimental re-entry vehicle with a J-1 rocket. This vehicle successfully reentered the atmosphere at a speed of 14.4 Mach. It landed intact in the sea 1300 kilometers away. Tokyo justifies this project under the banner of developing a space shuttle. While Japan may in fact be expanding its space program, this technological breakthrough provides Japan with a prerequisite technology for effective ballistic missile designs.

Even though Tokyo attempts to justify each policy or technological achievement under the banner of a peaceful application of its nuclear power or aerospace programs, the fact remains that these technologies could also be used for the production of nuclear weapons and delivery systems. Tokyo has made a deliberate effort to ensure that its industries have pursued these technologies, thereby suggesting that its intentions are complex and may extend beyond declared purposes. While such achievements may be a coincidence, it appears more likely that Tokyo's nuclear policy since 1976 has been to pursue dual-use technologies that allow it to become a virtual nuclear weapons state.

C. CAUSAL FACTORS

1. Internal Factors

An analysis of the motivation of Japanese elites to maintain nuclear weapons options would be incomplete without considering the influence of Japan's strategic culture and its society's aversion to unequal treaties. Japan's traditions of self-reliance in military affairs and maintaining a strong military state provide the analyst a window into the mind-set of policy elite, while the aversion to unequal treaties helps to explain why Japan may keep its nuclear weapons options open, thereby explaining Japan's nuclear weapons policies.

a) Strategic Culture

Thomas Berger defines strategic culture as "a subset of the larger political culture that influences how members of a given society view national security, the military

as an institution, and the use of force in international relations."¹¹⁸ Berger's definition is especially interesting when applied to Japan. During the period from at least 700 AD to 1945 Japan's strategic culture was distinguished by self-reliance in national security and respect for the military. Japanese culture placed value on the role of the warrior and maintaining a strong military state.¹¹⁹ With the end of the Second World War, however, the victors, principally the United States, forcibly dismantled Japan's vast military-industrial complex, so that Japan would never again have an offensive military capability thereby changing Japan's security environment. No longer could Japan remain autonomous in assuming its own security. Rather than renounce the principle of self-reliance, it may be argued, Japanese political elites sought to re-establish Japan's status as a strong military state by developing new ways in which it could diminish its dependence on an external protector.

Since 1945 the United States has played an active role in Japanese military security. The U.S. presence in Japan serves Japanese interests by allowing Japan to limit its defense expenditures and helping to alleviate Asian fears that Japan may some day rise again militarily. Japanese elites understand that the American presence serves these purposes, but elites also recognize that this international setup may not last forever.

¹¹⁸ Thomas Berger, "Norms, Identity, and National Security in Germany and Japan," in Peter Katzenstein ed., The Culture of National Security (New York: Columbia University Press, 1996), 325-326.

¹¹⁹ See: Meirion Harries, Soldiers of the Sun (New York: Random House, 1991) and Mark Borthwick, Pacific Century (Boulder: Westview Press, 1992), 41; 47-51; 119-40; 159; 241-9; 271. For a discussion of Japan's tradition of self-reliance and belief in a strong military state.

Japan's tradition of self-reliance may cause Japanese elites to question the reliability of U.S. security guarantees. In the mind-set of Japanese elites, therefore, there is a need to keep Japan's nuclear options open. Thus, it appears possible that Japanese elites might seek greater autonomy in security by imbedding nuclear weapons options within the nation's aerospace and nuclear energy programs. The options available to a virtual nuclear weapons state may satisfy domestic anxiety about having to rely on the United States for protection and may allow Japanese elites to judge that self-reliance in military affairs had been achieved.

b) Unequal Treaties

The international community has taken steps to ensure that nations do not pursue weapons of mass destruction. Treaties reflecting widely endorsed "norms" of behavior are therefore an external factor that can influence Japan's nuclear policies. The NPT is one such treaty. Rather than merely extending the NPT for a specific period of time, delegates to the 1995 NPT extension conference extended it indefinitely. Due to Japan's aversion to nuclear weapons and its unique "nuclear allergy," one would think that Japan's vote on indefinite extension would have been automatic. An examination of discussions preceding the conference suggests, however, that Tokyo's affirming vote was not cast without some debate.

During the Group of Seven economic summit in Tokyo in June 1993, the United States forced Japan's undeclared nuclear policy into the open. At the summit, the United States requested that Prime Minister Miyazawa provide a more powerful statement

backing unconditional as well as indefinite extension to the NPT.¹²⁰ According to Harrison, "To Washington's surprise, Japan refused to accept inclusion of the word 'unconditional' in the 1993 summit communiqué and agreed only at the eleventh hour to join in reaffirming support for indefinite extension."¹²¹ Shortly after the Tokyo summit, Yoshifumi Okamoto, the Deputy Director of Japan's Foreign Ministry's nuclear division, clarified Japan's view on indefinite extension.

The NPT is an unequal treaty. On the one hand you have five countries that can have nuclear arms. On the other, all the others who are prohibited from having them. We have no intention of calling into question our commitment not to possess nuclear weapons. But if North Korea obtains nuclear weapons, there will be a debate in Japanese public opinion regarding the means of confronting this situation. And this could weaken our commitment to the NPT.¹²²

This statement allows one to draw two conclusions about Japan's nuclear weapons policy. First, it demonstrates that Japan was not keen on closing its nuclear options entirely because of the possibility that another Asian nuclear power might someday threaten Japan. This suggests that Japanese elites do not completely trust U.S. nuclear security guarantees and that they perceive that they may need to pursue policies at some time to provide for Japan's own defense, which may include nuclear weapons.¹²³

¹²⁰ The humiliation associated with accepting "unconditional" surrender at the end of the Second World War may help to explain Tokyo's resistance to including such a word in its policy declarations.

¹²¹ Harrison, Japan's Nuclear Future, 29.

¹²² *Ibid.*, 29.

¹²³ In its 1980 White Paper, the Defense Agency once again noted, as it did in 1970, that defensive nuclear weapons would not violate the Constitution, specifically mentioning Nike-Hercules Air Defense Missiles and 203 mm howitzers. (Harrison, Japan's Nuclear Future 13). Regarding nuclear weapons: The Ministry of Foreign Affairs prepared a document in 1995 for the coalition government to send to the

Second, the statement demonstrates Japan's aversion to "unequal treaties." Japanese elites view the NPT as unequal because it prevents Japan from pursuing nuclear weapon development, while other powers are recognized as nuclear weapons states. Both conclusions suggest that Japan may desire to keep its nuclear options open. Furthermore, the conclusions suggest that Western assessments may overstate the degree of Japan's aversion to nuclear weapons. While international pressure to endorse an indefinite extension of the NPT is an external factor, Japan's nuclear policies appear to be more significantly influenced by the internal factors of domestic perceptions of insecurity and disillusionment with unequal treaties.

2. External Factors

a) U.S. Influence

Since the end of the Second World War, Japan has relied on the United States to provide for the vast majority of its defense. Many would argue that this defense relationship has fostered a mutually beneficial bond unlike any other bilateral relationship in existence. Others claim that Japan has taken advantage of the relationship to achieve global economic preeminence at the expense of the United States. Still others contend that the alliance acts as a check on Japanese military ambitions. Regardless of what view one takes, the alliance cannot be fully appreciated without looking at it through Japanese eyes.

World Court that the use of nuclear weapons in war was not necessarily illegal (this document was never forwarded). "What 'Non-Nuclear Japan is Not Telling the World; And How Tokyo Keeps its Options Open." Washington Post. (April 2, 1995). Available Online. LEXIS-NEXIS. Library: News, File: Allnws. 23 March 1998.

In so doing, it becomes apparent that certain aspects of the U.S.-Japanese security alliance cause anxiety among Japanese elites.

In 1980 the Prime Minister of Japan established a commission to investigate Japan's national security strategy. In its "Report on Comprehensive National Security," the commission concluded that American supremacy had come to an end in both military and economic spheres during the 1970s and that U.S. military power was "no longer able to provide its allies and friends with nearly full security."¹²⁴ This plainly suggests that Japan saw the U.S. as weak and unable to handle all threats. Comprehensive security was defined as a policy to protect Japan against all sorts of external threats "through a combination of diplomacy, national defense, economic and other measures (which) freed national security from the straight-jacket of the Security Treaty, allowing Japan to secure its external environment by other means."¹²⁵ The "Comprehensive Security" report conveys the insecurity of Japanese elites and their belief that responsibility for dealing with security concerns must be taken into their own hands. More importantly, it suggests that self-reliance remains an important factor in Japan's strategic culture. Thus, while the external factor of U.S. security guarantees theoretically limits Japan's incentives to pursue the acquisition of nuclear weapons, internal factors seem to encourage Japanese policy making elites to pursue self-reliant security policies. Hence, it would be natural for the elites to attempt to develop options to alleviate their anxiety.

¹²⁴ Reinhard Drifte, Japan's Foreign Policy (New York: Council on Foreign Relations Press, 1990), 29.

¹²⁵ *Ibid.*, 30.

b) 1993 North Korea Crisis

In July 1993, Foreign Minister Muto was explicit about Japan's nuclear capabilities and intentions. He stated that "if North Korea develops nuclear weapons and becomes a threat to Japan, first there is the nuclear umbrella of the U.S. upon which we can rely. But if it comes down to a crunch, possessing the will that we can do it [i.e., build nuclear weapons] is important."¹²⁶ This statement was made during the crisis provoked by North Korea's threat to withdraw from the NPT and to inhibit International Atomic Energy Agency (IAEA) inspections of its nuclear facilities. Even though it was made during a crisis, it allows one to draw two conclusions about Japan's nuclear weapons policy. It suggests that Japan has the capability to produce nuclear weapons and that the elites would consider a self-reliant nuclear policy should national leaders conclude that the United States is unable or unwilling to satisfy its commitments to Japan's security.

Due to intense diplomatic negotiations and military brinkmanship, North Korea did not withdraw from the NPT and ultimately allowed the IAEA to inspect its nuclear facilities. The agreement reached between the United States and North Korea, however, probably leaves Japanese policy elites with perceptions of insecurity. After all, the question of whether North Korea has already built a nuclear weapon remains unanswered.¹²⁷ According to Harrison, "The agreed framework allowed Pyongyang to

¹²⁶ Harrison, *Japan's Nuclear Future*, 29.

¹²⁷ On January 9, 1994, then Secretary of Defense Les Aspin, appearing on ABC TV, indicated that North Korea may possess the bomb. On January 27, 1994, a Japanese weekly, *Jugan Moonchu*, reported that a group of Russian nuclear specialists argued in a report sent to Moscow that they believed North Korea already had one or two nuclear bombs. On January 20, 1994, CIA Director James Woolsey is

maintain its nuclear devices – bombs-in-the-basement, bombs ready to be assembled, hidden plutonium, or whatever – by delaying special inspections by several years."¹²⁸ The combination of a potentially nuclear-armed North Korea, Japan's strategic culture, and the statements by political leaders regarding their nuclear intentions suggests that Japan may well have the political motivation to pursue nuclear weapons options. Even though North Korea represents an external threat, internal factors appear to drive Japan's nuclear weapons policies.

D. CONCLUSION

Since 1976, it appears that Japan has pursued specific technological achievements that would facilitate the pursuit of nuclear weapons options. In many cases, one could brush such advances aside as a consequence of routine scientific achievement, but when one considers self-reliance and the belief in a strong military state as aspects of Japan's strategic culture, such advances might be construed as the deliberate consequence of a purposeful strategy.

The tradition of military self-reliance has been an element of Japan's strategic culture for several centuries. Even though the Second World War eliminated Tokyo's ability to be self-reliant in national defense, this tradition appears to have persisted. Post-war statements and the rhetoric of Japanese elites suggest an intention to pursue nuclear weapons, should they perceive the need to do so. Japan's 1955 Atomic Energy Act

believed to have told the Japanese foreign minister in Tokyo that North Korea had 16 to 20 kg of plutonium. Harrison, Japan's Nuclear Future, 107.

¹²⁸ Ibid., 87.

prohibits nuclear weapons development or research, thereby leaving Tokyo facing a paradox. While self-reliance is a cherished value of Japanese strategic culture, domestic law and an international treaty commitment (the NPT) prohibit pursuing a nuclear weapons capability.

One way in which Japan may have finessed this problem was by pursuing the dual-use technologies that allow Japan to have the options of a "virtual" nuclear weapons state. As a virtual nuclear weapons state, Japan does not have to actually assemble nuclear weapons but can be prepared to do so within a matter of days, weeks, or months, thereby providing Japan with the capability to be more self-reliant in military affairs. The tradition of self-reliance, the nation's aversion to unequal treaties, domestic perceptions of insecurity, and the anxiety of political elites regarding Japan's nuclear-armed neighbors all influence Tokyo's nuclear policies. Such factors suggest that Japanese elites may have deliberately cultivated nuclear weapons options in order to ensure a measure of self-reliance.

Both Japan's rocket program and F-2 program were designed in order to provide Japan with autonomous capabilities. Both serve as dual-use technologies that could be used to deliver nuclear weapons. More importantly, because these technologies are autonomous, Japan does not rely on other nations to aid in the production of these systems. Japan therefore has the technological ability to autonomously build and deliver advanced nuclear weapons, thereby making it a virtual nuclear weapon state.

Tokyo's policies affecting its FBR and plutonium reprocessing suggest that it may have long had the political will to ensure that its nuclear weapon options remain open.

While there can be little question that the FBR and reprocessing facilities were designed to provide Japan with an autonomous nuclear energy program, they also inherently allow Japan to have indigenous nuclear weapons options.

Japan is the only non-nuclear-weapons state that continues to pursue a nuclear energy program based on plutonium. During the late 1970s the United States made overtures to discourage Japan from pursuing an indigenous reprocessing capability, but Japan has not backed down. Even after several accidents at its Monju facility, which have caused domestic uneasiness with plutonium, Japan's elites have sustained their plutonium policy. When Tokyo's plutonium policies are examined longitudinally in parallel with its development of dual-use delivery systems, it appears that Japan may have nuclear weapons options imbedded within capabilities pursued for other reasons.

As long as international events bypass direct threats to Japan, its constitution, the U.S.-Japan security alliance and Japan's aversion to nuclear weapons will probably prevent Japanese elites from pursuing nuclear weapons more actively. However, the strategic cultural belief in a strong military state and military self-reliance will likely cause Japan to maintain its present status as a virtual nuclear weapons state for the foreseeable future.

V. CONCLUSION

A. SUMMARY

Japan's official nuclear weapons policy has not changed since 1955. Analysis of Tokyo's intentions and capabilities, however, suggests that Japan's weapons policy may be dynamic. The avenue by which Tokyo pursued its current status as a virtual nuclear weapons state is through its civil nuclear industry.

Chapter II argues that Tokyo's fissile material research began in 1952 without military intentions. The external factor of Eisenhower's Atoms for Peace policy enabled Tokyo to implement policies leading to a higher level of relative autonomy in energy production. Japan's nuclear policies from 1952 through 1957, therefore, reflected this goal. The internal factor of society-wide aversion to nuclear weapons likely inhibited policy elites from contemplating military applications of nuclear research during these years. Declassified documents suggest that in 1957, however, elites harbored undeclared motives. The elites appear to have changed nuclear policies to facilitate development of nuclear weapons options. After 1957, therefore, Tokyo's nuclear policy appears to have been to pursue nuclear weapons options under the auspices of pursuing autonomy in civil nuclear power production. Why 1957 was a turning point remains unclear. Did Japanese elites interpret the Soviet development of space launch vehicles and ICBMs as a factor that would ultimately weaken the credibility of U.S. guarantees? This question deserves further research.

Statements in recently declassified documents suggest that during the years 1964 through 1976 Japan had the capability to produce nuclear weapons and that the NPT was critical in efforts of the U.S. and other states to dissuade Tokyo from doing so. Tokyo, however, refused to rule out its nuclear weapons options, suggesting that its nuclear policy was one of calculated ambiguity. The debate within Japan's Diet over whether to accept the NPT provides evidence of this policy.

In 1970 Tokyo signed the NPT, but it was not until 1976 that it ratified the treaty. Tokyo appears to have taken deliberate steps during this period to ensure that its ratification would not foreclose its nuclear weapons options. The external factors of U.S. influence and the threat of isolation from the international community likely influenced Tokyo's decision to ratify the NPT, but these factors do not seem to have caused Tokyo to modify its nuclear policy. Rather, the internal factors of Japan's aversion to the unequal provisions of the NPT, the desire to keep nuclear options open and Tokyo's interest in nuclear energy research appear to have been more prominent in influencing both the decision for ratification and the implementation of calculated ambiguity as a policy. Rather than replacing Tokyo's undeclared pursuit of nuclear weapons options under the guise of peaceful energy production, calculated ambiguity augmented this policy. Tokyo's nuclear weapons policies, therefore, evolved during the 1960s and into the 1970s to encompass both calculated ambiguity and a deliberate pursuit of nuclear weapons options.

Tokyo has pursued numerous dual-use technologies applicable to both civilian industry and nuclear weapons since 1976. Rocket and aerospace research, reprocessing technologies and FBR technologies are just a few examples of technologies that have

legitimate peaceful applications, but that also may be used for nuclear weapons systems. While such innovations may be attributed to routine technological achievement, this thesis suggests that they may have formed part of a deliberate effort by Japanese leaders to achieve a virtual nuclear power status. Rather than a change in policy, it appears that this approach may have been a purposeful development of policies that Tokyo initiated in 1957. While doubts about the long-term reliability of American security guarantees and the crisis in North Korea likely influenced Tokyo's decision to pursue this status, these factors appear to have had only limited effects. Aspects of the strategic culture of Japan, such as the desire to be self-reliant and to maintain a strong military state, however, appear to have been more influential in encouraging Tokyo's pursuit of virtual nuclear power status.

It appears that Tokyo has continued with its policy of calculated ambiguity since 1976. Evidence of this policy may be found in recent statements by senior elites in Tokyo regarding whether Japan has the ability to produce nuclear weapons. In 1994 Prime Minister Hata stated that "it is certainly the case that Japan has the capability to possess nuclear weapons, but has not made them."¹²⁹ By way of contrast, Japan's Foreign Ministry denied that the nation possessed such a capability, asserting that the "mere possession of high level nuclear technology does not signify the capability of producing nuclear weapons. Japan does not have any expertise or experience in producing nuclear weapons.

¹²⁹ Quoted in Skolnikoff, et al., International Responses to Japanese Plutonium Programs, 23.

This means that Japan does not have the capability to produce them."¹³⁰ These conflicting statements suggest that Tokyo may deliberately continue to pursue ambiguity regarding its nuclear weapons options and intentions.

This thesis suggests that internal factors are more influential than external factors in influencing the direction of Japan's nuclear policies. Thus, in one sense, it both supports and undermines Katzenstein's institutionalist argument. Katzenstein argues that internal factors will prevent Japan from "going nuclear." This thesis agrees that internal factors drive Japan's nuclear weapons policies, but contradicts Katzenstein's conclusions. This thesis concludes that internal factors cause Japan to deliberately pursue a virtual nuclear power status with the intention of producing actual weapons when and if this becomes necessary, owing to changes in the international security environment.

B. IMPLICATIONS

1. Removal of U.S. Nuclear Umbrella

The United States provides a nuclear security guarantee to Japan. In theory, should Japan be attacked with nuclear weapons, the United States would take action to defend Japan. Many American policy elites believe that it is this "umbrella" that keeps Japan from "going nuclear."

In 1991 Dick Cheney, who was then the U.S. Secretary of Defense, said:

If I look at Germany or ... Japan, I see two nations that I hope will continue to be close allies of the United States....I would think [that] if the United States cuts back so much that all we can do and all we can talk about is defending the

¹³⁰ Ministry of Foreign Affairs statement quoted in Ibid, 23.

continental United States, we'll create an incentive for other nations that do not now feel the need to develop their own nuclear arsenals to do so.¹³¹

Chapter II notes that as early as 1957, some American observers recognized that U.S. nuclear policies and promises to defend Japan might have little impact on Tokyo's nuclear policies, depending in large part on Japanese assessments of U.S. reliability. What would happen if the U.S. reneged on its promise to extend its nuclear umbrella over Japan? It is possible that Tokyo would then substitute its virtual nuclear arsenal for an operational one, but the decision might well involve Japanese assessments of the risks involved, given the possible reactions in China, Russia, and Korea.

The external factor of the American nuclear security guarantee probably influences Tokyo's perception of security. This thesis, however, argues that internal factors also influence Tokyo's nuclear weapons policies. Therefore, rather than the removal of the U.S. nuclear umbrella causing Tokyo to exercise its nuclear option, it is the internal factor of Tokyo's security perceptions that might cause Tokyo to consider producing nuclear weapons. Should Tokyo perceive a high level of insecurity, it would probably exercise its nuclear weapons options by producing weapons and developing the other essential elements of an operational posture, including delivery systems and command and control arrangements. Conversely, should Tokyo perceive that Japan

¹³¹ Secretary of Defense Richard B. Cheney, address to the American Political Science Association, August 29, 1991, p. 8-1 of text furnished by the Department of Defense in David Yost, "The Future of U.S. Overseas Presence" Joint Force Quarterly, (Summer 1995), 80.

reasonably remains safe, it would probably resist the arguments advanced by advocates of nuclear weapons production.

This conclusion has multiple implications. First and most importantly, the removal of the U.S. nuclear umbrella would not guarantee that Japan would immediately pursue nuclear weapons; while this would be a significant development, other factors would also influence Japan's decision making. Tokyo's virtual nuclear status, which allows Japan to produce nuclear weapons in a relatively short time, may provide elites with the sense of security that they need to resist actually producing weapons. This being the case, it follows that a large conventional American military presence in Japan and East Asia might be enough to alleviate any insecurity perceived by Tokyo's elites, thereby inhibiting Japan's nuclear weapons production. If, however, U.S. security commitments were perceived to be unreliable by elites, they might choose to pursue nuclear weapons development.

2. A Nuclear North Korea

A nuclear-armed North Korea (or, hypothetically, a nuclear-armed united Korea) might lead Japan to develop nuclear weapons. Chapter IV points out that senior Japanese elites hinted at what their intentions might be during the 1993 crisis with DPRK, should that scenario occur. While a nuclear-armed DPRK might cause anxiety amongst Japanese elites, there is no guarantee that Japan would follow suit by producing its own nuclear weapons. It is not the external factor of North Korea's nuclear weapons development that would cause Tokyo to exercise its nuclear options, but the assessments by Japan's elites of the significance of Korean choices for Japan's security. Tokyo might choose to rely on the U.S. nuclear umbrella or its own virtual nuclear arsenal as a way to alleviate any sense of

increased insecurity. Furthermore, the Japanese public's aversion to nuclear weapons might provide enough resistance in society to inhibit policy elites from producing nuclear weapons.

Nevertheless, should the DPRK obtain nuclear weapons, it is most likely that Japan would follow suit. Japan's historical tradition of maintaining a strong military state and the value that its society places on the "warrior" would probably cause Tokyo to seek self-reliance in its nuclear arsenal. Hence, rather than the external factor of DPRK nuclear weapons development alone causing Japan to produce nuclear weapons, the internal factors of the strategic culture within Japanese society and the threat assessments by Japanese elites would also serve as the catalysts influencing the direction of Tokyo's nuclear weapons policies. A nuclear-armed Korea of any kind (North, South, or united) would probably be seen by the Japanese as a failure of implicit U.S. commitments to provide protection and stability in northeast Asia.

3. Unified Korea without Nuclear Weapons

North and South Korea may some day unify. Should these two states become one, Japan will likely have an economically powerful neighbor. While it is difficult to speculate on the military policies that a unified Korea might adopt toward Japan, one can assess that Tokyo would not necessarily exercise its nuclear options should this scenario occur. A unified Korea without nuclear weapons would not represent a threat because Tokyo would have the "trump-card" of its virtual nuclear arsenal, thereby allowing Japanese elites to perceive relative security. Japanese elites would have the knowledge that they could defend the nation with nuclear weapons in a relatively short amount of time if they needed

to do so. Furthermore, the Japanese public's aversion to nuclear weapons would likely thwart any consideration of nuclear weapons production as long as a unified Korea remained a non-nuclear-weapons state. Thus, Japan's senior elites will probably continue with policies that maintain a virtual nuclear power status because such policies are believed to provide a satisfactory measure of security to Tokyo.

C. THE FUTURE

Japan likely will maintain its virtual nuclear weapons power in the future through continuing its research in programs that enable Japan to keep its virtual nuclear power status. Such programs are likely to include further research in rocket and re-entry technology, further development of an indigenous plutonium-based nuclear power program, and extensive research in dual-use technologies that have both civilian and nuclear weapons applications. Japan is not likely to abandon its plutonium stockpile even if it receives international condemnation. After all, Tokyo can justify its program by referring to its peaceful applications – even though it provides Tokyo with the fissile material for possible nuclear weapons production. Japan, however, is not likely to convert its virtual nuclear power status into an operational arsenal as long as the status quo remains acceptable.

Katzenstein's argument that internal factors drive Tokyo's nuclear policies is accurate, but his conclusions are incomplete. Internal factors cause Tokyo to pursue a virtual nuclear power status because such a status allows policy elites to perceive a significant degree of self-reliance in military affairs. Rather than ruling out the possibility

of nuclear weapons options, as Katzenstein does, this thesis presents an argument that illustrates how internal factors, in combination with certain external circumstances, might lead Japanese elites to abandon Japan's virtual nuclear power status for an operational nuclear arsenal in the future.

Internal factors are more likely to drive Tokyo's nuclear weapons policies than external factors. Thus, it might seem that the U.S. could do nothing to influence the direction of Japanese nuclear policies. The United States, however, may be able to influence the direction of Japanese nuclear weapons policies by implementing actions specifically tailored to affect the internal factors that seem to drive Japanese nuclear policies. Such U.S. policies might include maintaining or even reinforcing the credibility of U.S. security commitments by demonstrating the steadfastness and sagacity of U.S. national security policy. This means that the United States must show staying power in its security commitments in East Asia, and skill and determination in dealing with crises and contingencies as they arise in the Asia-Pacific region and beyond.

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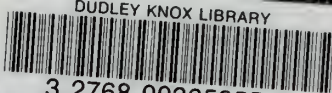
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